



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT NO. 132 NASSAU STREET, NEW-YORK, AT FIVE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, and
GEORGE C. SCHAEFFER, { EDITORS AND
PROPRIETORS. }

SATURDAY, AUGUST, 20 1836.

[VOLUME V.—No. 33.]

CONTENTS:

Notice to Contractors; New Arrangement, Mechanics Wanted; Editorial Notice; Communication on Locomotive Engines.....	513
Knoxville Convention	514
Correspondence of the Augusta Constitutionalist, dated Knoxville; the Antea and Buffalo Railroad.....	515
New-Orleans—Internal Improvements.	516
The late Hon. John B. Yates, Great Invention..	517
On the immersion of Copper for Bolts and Ship Sheathing in Moriac Acid, as a test of its durability.....	518
Agriculture, etc.....	519
Advertisements.....	527

AMERICAN RAILROAD JOURNAL.

NEW-YORK, AUGUST 20, 1836.

NOTICE TO CONTRACTORS.

PROPOSALS for excavating and embanking the Georgia Railroad from the upper end of the work, now under contract, to Greensboro', a distance of 34 miles, will be received at the Engineer's Office, at Crawfordsville, on the 21st and 22d days of October next.

—ALSO—

At the same time, for the Branch to Warrenton, 4 miles. And if prepared in season, the Branch to Athens, length 37 miles.

J. EDGAR THOMSON,
Civil Engineer.

NEW ARRANGEMENT.

ROPES FOR INCLINED PLANES OF RAILROADS.

WE the subscribers having formed a co-partnership under the style and firm of Durfee, Coleman & Co., for the manufacturing and selling of Ropes for inclined planes of railroads, and for other uses, offer to supply ropes for inclined planes, of any length required without splice, at short notice, the manufacturing of cordage, heretofore carried on by S. S. Durfee & Co., will be done by the new firm. All orders will be promptly attended to, and ropes will be shipped to any port in the United States.]

8th month, 8th, 1836. Hudson, Columbia County, State of New-York.

E. S. TOWNSEND, GEORGE COLEMAN,
ROBT. C. FOLGER, SYDNEY S. DURFEE.
33—tf.

MECHANICS WANTED,

AT Fort Schuyler, Throgs Point, Masons for laying large stone in a sea wall, Car, enters, a Millwright, and a steam Engineer and Machinist.
Apply at Fort Schuyler, or at Governors Island.
August 12th, 1836. 21—33

WANT OF WORKMEN.

We hear from every direction of the want of good workmen. At the fortification at Throgs neck, Masons can get very good wages—see advertisement.

We learn from our friends in Georgia, that good workmen can get high wages, and spend the winter in a very pleasant climate.

All necessary information to applicants, will be given on application at this office.

The following communication on Locomotive Engines is thankfully received, as will be every other one on the subject.

LOCOMOTIVE ENGINES AND INCLINED PLANES.

CITY HOTEL, New-York, Aug. 1, 1836.

DEAR SIR—In reading over No. 27, Vol. 5, of the Railroad Journal, I observed a communication headed Baltimore and Ohio Railroad Experiment, and signed W. L., Civil Engineer, Schenectady.

This publication, I beg leave to observe, gives us rather an unfavorable view of those valuable experiments, and from observing this and some other little misrepresentations, in the Civil Engineer Department, between theory and practice, I have been induced to make the following feeble effort to represent facts in a clear light.

The formula given by W. L. for the computation is correct, but the friction of the wagons he has taken at $\frac{1}{10}$ part of their weight, this must be entirely too small a value for the friction. By the late valuable experiments of Pambour on Locomotive Engines and Railroad Wagons, we get the value of the friction of Railroad Wagons at 8 lbs per ton, assuming this as the friction in my calculation.

The following is a comparative view of the result by the two values of the resistance.

Weight of Engine $8\frac{1}{2}$ tons, load exclusive of the Engine, drawn up an Inclined Plane, ascending 1 ft. in 20 ft., was $12\frac{1}{4}$ tons.

FORMULA.

$$R = W + \frac{b \times x}{a}$$

The letters R W b a and x represent the values written after them beneath.

Let R = the load on a level road excluding Engine.

Let W = the load on an inclined road, excluding engine. } drawn

Let x = the gross load on an inclined plane. } up.

Let a = denominator of a fraction expressive of the inclination.

Let b = denominator of a fraction expressive of the friction.

Then by substituting these respective values for these letters, and reducing the equation, I find the load on a level road to be $302\frac{3}{4}$ tons. This load the Engine will be able to draw at the same velocity she drew at $12\frac{1}{4}$ tons up the Inclined Plane at 1 in 20. Mr. W. L. has his load for a level $427\frac{1}{4}$ tons, the difference rests in the different values taken for friction. If the whole weight of the Engine rests on her working wheels the power of adhesion, in favorable weather, would enable her to draw $378\frac{1}{4}$ tons on level, and that, at the velocity she drew the former load on the Plane.

By having $6\frac{2}{3}$ tons weight on her working wheels, she would be able in the like weather to draw $302\frac{3}{4}$ tons the load. I have computed to equalize the given performance, consequently she must have had $6\frac{2}{3}$ tons on her working wheels, else she could not do the above stated work.

But there is nothing impossible in the statement. Certainly Mr. W. L. must have known that $\frac{1}{10}$ was too small a value for

the resistance of the rail, and it has been probably used to distort a comparative view of the loads for a level and ascending roads. The other parts of this publication I have partially examined, but on not finding data to base any calculation on, either in it, or the original, signed C. R. W., I have been induced to make a short table of the different loads to suit sundry grades. Thus taking the Engine 8½ tons, and friction 8 lbs per ton.

Ascent in feet per mile.	Load in tons.	Ratio of grade.	Comparative view of loads by \times by ratio of grade.	Ratio of engine.	Engine in tons.
level.	200	—	200	—	—
13.857	95.75	2	191.5	1	8.5
37.715	61.00	3	183.	2	17.
56.572	43.625	4	174.5	3	25.5
75.430	33.2	5	166.	4	34.

The load taken for a level is 200 tons; and there is as much power required from an Engine in ascending a Plane of 18.857 feet per mile, with a load of 95.75 t., as with the above load of 200 tons on a level. The comparison for the other lines in the table may be done in like manner, or they may be compared with each other, as each of the horizontal lines requires = power with each other, and with the top line also.

The defect in the load, as seen by the fourth column, is owing to the power expended by the Engine to support her gravity ascending the Inclined Planes.

This result in the above table differs much from Mr. Seymour's assertion that 25 feet ascent per mile only required double traction. Now we see 18.857 feet requires more than double traction by once the weight of the Engine. The following table will give us a more clear view for comparison. Thus taking the same values of the foregoing table to express engine, &c.

Ascent per mile in feet.	Load in tons.	Ratio of load.	Load by ratio of loads	Ratio of loads	Product of ratio of loads by ascent in miles per ft.
level.	200.	—	200.	—	0.00
17.38	100.	2	200.	2	8.69
28.23	75.	$\frac{200}{75}$	200.	$\frac{200}{75}$	10.586
48.35	50.	4	200.	4	12.090
98.57	25.	8	200.	8	12.315

The explanation of the former table will suit for this, as they differ but little in the progressive grades, and agree exactly in the comparative necessary powers to draw loads up those Planes.

This table shows us that 17.38 feet ascent per mile require double traction of a Locomotive Engine, compared with a level road, or in other words she cannot draw but half the load up this Plane that she will take on a level at the same velocity; and at 48.35 feet ascent per mile she can only draw $\frac{1}{4}$ of the load she will on a level road, also, at 98.57 feet ascent per mile, she can only draw $\frac{1}{8}$ of the load she will on a level road. In all the foregoing the road is understood to be straight. Now if Mr. W. L. can support Mr. Seymour in his assertion of not less than 25 ft. per mile to require double

traction, I should be pleased to hear him do so. This mere outward smoothing assertion appears, by a comparison with these tables, (say the least of them) to be vague and full of discrepancy with truth.

In Mr. S.'s communication of the 23d of Jan. last, to the President of the New-York and Erie Railroad Company, he also asserts that a Railroad curving, with a radius of 700 feet, when travelled over at a velocity of 12 miles per hour, merely occasions an equal resistance with those of an Inclined Planes ascending 18 ft. per mile. Above we see that 18 ft. per mile occasions more than double traction, consequently, by his assertion, a curve of 700 ft. radius in a Railroad, when travelled over at the velocity of 12 miles per hour, occasions an additional resistance of more than an equivalent to draw this load at the same velocity on a straight level road. Certainly the inconvenience of causing double traction is considerable, but when we see it smoothed over, by the remarks that its grade only wants to be flattened 18 ft. per mile, to make it as easy as a straight level road. Let us view for a moment a Railroad in its natural way; when curves are necessary in Railroads it is most generally at the points of, rocks and round low dells and valleys, and one reason for submitting to curves is to avoid the great expense of excavation and embankment.

(To be Continued.)

KNOXVILLE CONVENTION.

The following letters and remarks, from the Savannah Georgian, will prove interesting to the friends of internal improvement.

We have also received the Report of the South Carolina Commissioners to the Convention, and shall publish it in our next

KNOXVILLE CONVENTION.—This important Convention, we learn, has adjourned—not, as some letter writers have predicted, without yielding to the claims of Georgia, but, as we are led to believe, with a full conviction, that it will be for the interest of the people of the west to have more than one outlet for their productions.

We have been favored with the following extract of a letter from one of our fellow-citizens, at present at Flat Rock, to a gentleman of this city, dated 12th inst. (Tuesday last.)

"The Convention at Knoxville adjourned *sine die* about 12 o'clock on Friday last, and two of the South Carolina delegates arrived here, (Flat Rock) last evening.—One of them informs me that the railroad is to come up the valley of the French Broad, and will pass not far from Flat Rock. The Georgia and Carolina members compromised, and the Convention unanimously agreed that a road should pass through Georgia and strike the main line at some point near, or at Knoxville, and the stockholders thereof then to be considered as the same company, and to be in all respects the same as the original stockhold-

ers. This great undertaking is to be commenced immediately. The Convention, it is said, was in some danger of breaking up without doing any thing, had it not been for the compromise with the delegates from Georgia, which appeared to satisfy all parties."

Other extracts of letters from the correspondents of the Augusta Constitutionalist of earlier date, will be found in our columns.

Since writing the above, we have been favored with the following extract of a letter received in this city, from one of the delegates from Georgia, dated,

"Clarksville, July 13th, 1836.

"The Knoxville Convention was perhaps the most respectable ever held in the Southern and Western States. Col. Williams, of Tennessee, was called to the chair, Gen. Hayne, of South Carolina, unanimously elected President, by about four hundred delegates from ten States. Pryor Lea, of Tennessee, was appointed Secretary. A select committee of forty were appointed, to which all the different subjects brought before the Convention were referred. The Georgia delegation consisted of about sixty; to the surprise of most of us, when we got to Knoxville, we found that charters for a company had been already granted by the States of Kentucky, Tennessee, North and South Carolina, limiting the road and company to those four States, Georgia being excluded. A very able and clear report of the trade and resources of Georgia, was immediately, however, prepared by a committee; Messrs. S. B. Parkman, of Savannah, R. Campbell, of Augusta, and Poe, of Macon, and read to the Convention, which, while it astonished the western members, convinced them that it was decidedly for their interest to bring Georgia into the compact; and on the motion of Mr. Wickliffe, of Kentucky, it was unanimously resolved to recommend to the several States, so to amend the charters as to permit Georgia to participate upon perfect terms of equality with the other States, and to connect a branch of the road at Knoxville. Col. Blanding, of Columbia, S. C., with others in that interest, had fixed long before the meeting of the Convention, that the main track must go through the French Broad in North Carolina, by Columbia to Charleston, and of course came prepared with a printed report of the Engineers, showing the facilities of that route; by these the estimates were, that 60 or 90, I forget which, but I believe the latter number of miles would cost an average of \$30,000, and 10 miles an average of \$40,000. By Mr. Thompson, the Georgia Engineer's report, confirmed by Col. Brisbane, the Engineer of South Carolina, it is estimated that the cost of a single track from Athens to Knoxville, 205 miles, would only average \$8,500, and that there was no single mile which would exceed \$15,000; this route is by Clarksville, through Miller's Gap in Rabun, then down the Little Tennessee, to about 12 miles below the Smoky Mountains, then across the country to Knoxville.

"This report was read before our delegation, but the Carolinians with some little aid from Georgia, succeeded in preventing its being read before the Convention; and I have some doubts whether it will ever be presented with the other documents laid before the Convention. But with such an easy passage before them, the Columbia interest could not venture to insist upon the French Broad being the best route, and therefore the only resolution offered and adopted, was that a practicable route within the chartered limits, had been found by way of the French Broad from Cincinnati to Charleston.

The above letters exhibit a flattering evidence of the favorable disposition of the delegates in Convention towards our State. We hope and trust that it will not be in vain, but that the people will, (throughout the State,) rouse up *en masse*, and return to the next legislature men who will, by their strenuous efforts to advance the prosperity of their State, show the people of other States that they are not only awake on the subject of Internal Improvement, but are unwilling to see their State out-stripped by other States in the march of that prosperity, to which an enlightened spirit on the engrossing subject (to which we have referred) can alone elevate her. Georgia must act through her legislature. Delegates must be sent to the Legislatures of Tennessee, Kentucky, Ohio, North and South Carolina, to procure amendments to the charters already granted, so that Georgia, with her imposing position—her immense resources, may be allowed to participate in a work, creditable to the enterprise of those States, who first originated it. The State too must subscribe, and not leave to individuals the completion of an enterprise, which must, more or less, pour into the lap of her citizens—the treasures of other States, by producing a commercial spirit so eminently necessary for a sound and healthful action in the people generally.—We must not be slothful at this time. If we are, we will live to reproach ourselves for our inaction, and posterity will grieve that a people lived before them who bartered their birth-right for a mess of pottage—who cast away their abiding interests for selfish or party gratification.

From the Correspondence of the Augusta Constitutionalists.

Knoxville, (Tenn.) 6th July, 1836.

Gentlemen:—Having obtained a list of the committee of 44, and believing you would like to see it, I shall forward the same with such other remarks as may occur.

Those taken from the Ohio Delegation are, Doctor Drake, E. S. Thomas, and Mr. Mansfield.

From Indiana, Melton Stopp, and Mr. Fields.

From Kentucky, Robert Wickliffe, Judge S. S. Nicholas, Daniel Buck, Richard Haws, John Kincaid, F. F. Fox, and Daniel Garrard.

From Tennessee, John Williams, Judge

Emmerson, Gen. John Cocke, M. C. Rodgers, and F. B. Fogg.

From North Carolina, Gov. D. L. Swain, Dr. S. F. Hardy, Joseph M. D. Carson, J. Humphry Bissell, H. P. Willis, Samuel Chunn, E. M. Bryant, and Mr. Avery.

From Virginia, Peter C. Johnson, and Samuel C. Goodson.

From South Carolina, Abm. Blanding, Chas. Edmonston, Judge Bayles Earle, Judge O'Neal, Alex. Black, James Wardlaw, J. Barkley, and Gen. Hayne.

From Alabama, Dr. Thomas Fearne, and John D. Williams.

From Georgia, Judge A. S. Clayton, Richard W. Habersham, Wm. Dearing, H. M. McAllister, and W. W. Holt.

To-day the Convention met, and after reading the minutes of yesterday, Mr. Chapel, from Macon, presented a report on the practicability and importance of the different routes for railroads through the State of Georgia, together with the report of the Engineer of the Athens railroad to the Committee of 44.

Some one moved to add Mr. Coleman, Maysville, Kentucky, who had just arrived, to the Committee of 44 which was agreed to. Thus the committee will hereafter be called the Committee of 45. Some one attempted to add another member to this committee, from Lincoln county, North Carolina, but was not sustained.

Perhaps we shall be able to have our different reports printed for the benefit or instruction of the people of the West. Our report yesterday on the commercial advantages of our State seemed to astonish many of the people of this Convention.

The Convention adjourned to-day to meet to-morrow at 12 o'clock, by which time we hope the committee will probably be able to report at least in part.

The distribution of the surplus fund appears to have in the minds of some, removed some of the difficulties which were in the way of the construction of the contemplated Railroad. There is evidently some discrepancy about the ability of subscribing for the stock. But this fund they hope to be able to have appropriated to this matter.

I have forwarded the report, &c. of the South Carolina Commissioners to the Knoxville Convention. I have heard nothing farther from the committee, therefore will close my letter.

Respectfully, yours,

A. CUNNINGHAM.

It is believed, if the road is recommended to pass through South Carolina to Columbia and Charleston, that the other States will make such amendments to their charters, as will allow Georgia to connect her road at any point on the route, with full and equal privileges. The northwest is already favorably disposed to the route through Georgia. The cost according to Mr. Thompson's estimate, would not exceed \$14,000 per mile from Knoxville to Athens, Georgia, finished in the very best manner. The advantages South Carolina has, are, in having obtained the charters in which Georgia is not named, and been ac-

ive in directing the preliminary movements, and offering a continuous route, and a willingness to be a large subscriber to the stock—against these, Georgia offers the best route, and greater choice of markets.

A route connecting Nashville, (from whence there is to be railroad to Louisville,) entering Georgia at Murray County, joining the Athens road, also branching to Macon and Columbus, has many friends.

The distribution of the public revenue will give a new impulse to the railroad feeling, and new routes will be proposed in every direction.

July 6—Convention met at 9 o'clock; some new delegates from Ohio made their appearance; adjourned at 11 o'clock until to-morrow at 12, when the great committee will probably report. They have been in animated debate to-day, which resulted in appointing a committee of conference, (of five) to report on the subject of charters.

Yours, &c.,

T. G. CASEY.

From the Courier and Enquirer.

THE ATTICA AND BUFFALO RAILROAD.

This road will form the last western link in the chain of railroads from Albany to Buffalo, the first or eastern link of which to Utica, is in active operation. The other portions are all chartered. Attica is near the centre of the county of Genesee, 30 miles directly east of Buffalo. The whole elevation from the Tonawanda to the Buffalo summit is only 80 feet; the greatest ascent per mile is 35 feet for two miles only; the rest is from 30 feet per mile to a level. The charter is very liberal: goods and freight are to be carried at all seasons without restrictions as to canal duties. The cost will be cheap, not over from \$6000 to \$7000 per mile, including every thing for a single track and necessary turnouts, which with the rich country and great thoroughfare of the commerce of the west in the tract of which it lies, together with the facts that there are no charters of turnpikes to be bought out, and that most of the owners of the land residing on the route, have already given written releases to the land for the use of the road, are sure to make stock in this road a profitable investment. The following is an extract from the report of the Engineer:

On leaving the village of Attica, for the first two miles, which brought me to the summit, the whole rise that must be surmounted is eighty feet, passing up a small stream, or rather ravine, on almost one regular inclined plane. This may, however, be reduced by extending the plane a greater length, by cutting through near the summit so as to reduce it to a rise of about thirty-five feet to the mile, or it may be brought to a much shorter space, and surmount the rise in a shorter or longer distance as may be thought best, and yet not materially affect the expense of grading.

From the summit westerly to Alden, I find almost one perfect inclined plane, falling from twenty to thirty feet to the mile, a distance of seven to eight miles. From Alden westerly, we pass along the valley of a creek, a distance of eleven miles, with

no material obstruction, gradually descending a part of the way, while other parts of the route we run on a level to the village of Lancaster, where we have to cross a stream, which will require bridging or embanking a distance of two hundred feet. From Lancaster to Buffalo, a distance of about ten miles, the present surface of the ground is almost sufficiently graded for laying timbers for the road, and it is nearly a level. The route, on the whole, is an advantageous one, and indeed more advantageous than can be found in most sections of this vicinity. The whole amount of grading will not exceed from eight hundred to one thousand dollars per mile; and even one-half the distance may be graded for less than half that sum. All of which is respectfully submitted.

JAMES I. BALDWIN, Engineer.

The Tonawanda Railroad which runs from Rochester to Attica, will be completed early in the next summer, a distance of about 41 miles, so that the whole distance from Rochester to Buffalo over these roads, will not exceed 72 miles. Should the stock of the Attica and Buffalo road be readily taken, the whole may be finished within one year from the first of September next. The books will close this afternoon, a 3 o'clock, at the Farmer's Loan & Trust Co.'s Office.

From the New-York Express.

NEW-ORLEANS—INTERNAL IMPROVEMENTS.

Having noticed the improvements in progress to meliorate the health and port of New-Orleans, and to benefit the navigation of the Mississippi, by removing the obstructions at its mouth, we shall now glance at the internal improvements in and near that city, for increasing and extending the facilities of intercommunication for trade and travel, with the remote parts of Louisiana and the adjacent States. The merchants and other citizens of New-Orleans have wisely resolved not to depend exclusively on the manifest natural advantages which that city enjoys by its position on the "father of waters," but have concentrated the late improvements in steam, in several canals and rail roads immediately or mediately leading into the city.

The Canal Carondelet connecting the Mississippi river with Lake Pontchartrain, by the river St. John, has been in operation since 1805. The company incorporated for that purpose has a perpetual charter with extraordinary privileges; and are now using every exertion to promote the advantages they enjoy. This unwonted energy has been caused by the competition experienced from the canal constructed in the upper part of the city, in the same direction and for similar objects, under the care of a banking company, having a capital of four million of dollars.—This canal is upwards of six miles in length, and has by its side a turnpike road covered with shells. When completed it will be 120 feet wide, and adapted for the steamboats which ply on the lakes to Mobile, and other ports in the Gulf of Mexico. There are two other canals very near

New-Orleans, on the west side of the river—the Plaquemine, which has been in operation for several years; and the Barrataria and Lafourche canal. This latter has been so far completed, as to open an inland communication between New-Orleans and the Barrataria bay; but it is designed to extend westward through the lake Verret, and the Atchafalaya and Teche rivers.—The second section of this line will be finished during the ensuing winter.—Steamboats of light draught ply on this canal.

But more attention is properly paid to railroads than to canals in that neighborhood, as the numerous water courses supersede the necessity of the former, except in the south-western parts of Louisiana, where the alluvial lands are scarcely yet formed or reclaimed from the Gulf. There are now three railroads in full operation in New-Orleans—the Pontchartrain, the Carrollton, and the Orleans.

The Pontchartrain railroad was the second completed in the Union; and is probably the best disciplined in every respect. It runs through a street in the lower part of the city—now situated in the third municipality—to Lake Pontchartrain, where a harbor is constructed, with a respectable hotel for boarders and visitors, to enjoy the lake breezes. This drive would be excellent, were it not through swamps; but these will shortly be reclaimed. Locomotives on this route run every hour during week days, and every half hour on Sundays. The company incorporated to construct this railroad, was lately conceded banking privileges, with a capital of one and a half million, in order to construct a similar road in the lower part of the city, to Lake Borgne, where a good harbor will be formed that can facilitate greatly the communication by that part of the Gulf of Mexico with New-Orleans.—The navigation of Lake Borgne, has hitherto been neglected, although the great depth of water was evidenced by the expedition of the British in 1814, when invading Louisiana; but the spirit of competition now happily excited in New-Orleans, by the struggles for the trade of various ports among the sections and classes of that city, will bring all facilities of communication into action.

The Orleans railroad is a petty one, ostensibly designed to effect an easy and expeditious route to a new country in the rearward swamps; but really designed by its projector, to improve his own land in that neighborhood. It has accomplished both. A horse car runs on it every hour, for the convenience of those travelling in that direction.

The railroad to Carrollton enters the city to Canal-street; and is nearly six miles long. The company chartered to construct it, met with considerable opposition, and acted with so much energy in conquering it, that the Legislature of the State perceived the utility of conceding them banking privileges—exactng at the same time from them the duty of continuing the railroad to Bayou Sarah.—When this shall have been completed, the railroad from the latter place to Woodville,

in Miss., and thence another to Natchez; will give a continuous land route by steam from New-Orleans to Natchez. Various lateral railways will intersect the main route in this direction, through the eastern part of Louisiana; and bring a constant and early supply of produce, &c., to the market of New-Orleans.

A company (we are informed) is now organized, and will be chartered at the ensuing session of the Louisiana Legislature, to construct a railway through the lower parts of the city to the English Turn, first, and afterwards to the Balize—on the same plan, and for the like objects as the Carrollton railroad.

But the grand route, independent of the Mississippi, is the contemplated railroad to Nashville. This will be about 560 miles long. It has been surveyed throughout; and the route for several miles has been located and prepared for the grading. Owing to the opposition experienced in the Mississippi Legislature, as to the particular location of the route in that State, the energies of the company have been partially paralyzed; but the Mississippians being now restored to their better senses, will not again act so suicidally. The States of Tennessee, Alabama, and Louisiana, have largely subscribed to the stock of this company; and Congress has granted permission to pass through the public lands on the route.

The railroad to Nashville will have one grand entrance into New-Orleans, by Canal street, through which it will pass to the river; and will have lateral arms into the upper and lower parts of the city.—Throughout its course, lateral branches will be constructed on both sides to every principal town or city—so as to afford the necessary facilities to planters, in places where there are no roads better than bridle paths.

Were it not beside our purpose, we might notice the other railroads and canals in Louisiana; but we have designedly confined ourselves to those in and about New-Orleans. We may however, remark, that attention is simultaneously paid to the formation of companies to extend and secure the facilities of intercommunication between that city and her dependencies. A company has been chartered to establish regular lines of steamboats on Lake Pontchartrain to Mobile, touching at all the intermediate places; and a second company another line to Mobile and Pensacola. A banking company is required by its act of incorporation, to establish one such line of steamboats to Madisonville, another to Bayou Sarah, and a third to Natchitoches, on the Red river. We perceive also, by advertisements in the New-Orleans papers, that companies of merchants are now being formed to establish lines of steamships to Tampico, to Vera Cruz, and to Havana.

But the inhabitants of New-Orleans are singularly—we had almost written shamefully apathetic in the establishment of regular packets to distant and foreign ports. Some of the merchants of this city offered those of New-Orleans to furnish one or two regular lines between both cities, provided the merchants of the latter took a

certain share, so as to secure an interest in them; but the project was frustrated. And we learn that the New-Orleans merchants have absolutely refused to establish regular lines of packets either to Liverpool or Havre, as they prefer to depend on the transit trading ships. They will however, soon perceive the advantage if not the necessity of having regularity and punctuality in their trade, in order to secure despatch and afford certainty.

THE LATE HON. JOHN B. YATES.—We take from the Albany Argus the following extract from the will of the late Hon. John B. Yates. It is quite unnecessary to eulogise the character of a man who dispenses the fruits of a life of industry to the manner which Mr. Yates proposes in his will to do. We should think more favorably of mankind if similar instances of liberality were more frequent:—

THE WILL OF THE LATE JOHN B. YATES, ESQ.

We have been favored with an extract of this will, drawn by the testator himself, and lay it before our readers. It furnishes evidence of that enlarged and philanthropic intellect for which Mr. Yates was distinguished throughout his whole life. A large estate, between *three and four hundred thousand dollars*, over and above a very ample support for his widow, and other legacies, he has set apart for the purposes of literature and science. He has shown, in his dying moments, his regard for the morality, happiness and character of his country. Indeed, this was his 'master passion, strong in death,' and posterity will enrol his name among its noblest benefactors. During his life, he evinced the same unceasing solicitude for the general good. Aware that the perpetuity of our republican institutions could be best secured by a general diffusion of intelligence, no man was more active in the cause of education than he. The emphatic and no less interesting injunction contained in his address delivered in February last to the State Agricultural Society, exemplifies the deep interest he felt in its cause. These are his words: 'Do you wish, quietly, without injustice and without violence, to equalize property as coadjutors to the greater safety of the republic? and in fine do you wish to foster any hope to preserve your republic?—educate thoroughly your whole community.' At his own expense he established the Polytechny School at Chittenango, which was ably conducted, and continued in successful operation ten years.—His financial operations and unremitting exertions, in connexion with his partners, raised Union College from a state of comparative insolvency to that of opulence and distinction. We have no doubt that the legislature of this State will give every aid in its power to promote the great and benevolent objects of the testator, and thus furnish a monument more durable than marble to the memory of its truly patriotic and benevolent founder.

He conveys all his property to Mrs. Yates, his widow, Charles Yates, William K. Fuller, and George K. Fuller, *in trust*; and after providing for certain bequests, he directs as follows:

'I direct further that my said trustees apply the remainder of my property, my real and personal estate, if any there shall be, to the endowment and support of a school

embracing literary instruction, combined with the pursuits of real life of every practical description. The institution to be called the *Polytechny*, upon the plan as near as may be, laid down in the memorial presented by me to the legislature of the State of New-York, and the report of a committee and draft of a law founded thereon, during the session of the year 1830. If after winding up my affairs, it shall be ascertained that there are funds sufficient left to commence and found such institution, I then wish my trustees aforesaid to petition the legislature of this State to accept this devise for the object named, to confirm its permanency by a legislative act, and make the necessary arrangement for its uniform and steady government by the appointment of a Governor or Director, who shall not be liable to removal by the fluctuations of party or the miserable *churlatany* of political jugglers.

'If such a law to the satisfaction of my said trustees, cannot be obtained in this State, I then direct that as soon as may be, without incurring unnecessary loss, my whole estate left after the legacies and devices be disposed of, on the terms and in the manner that shall be thought most advantageous, and as it shall from time to time be disposed of or sold in such portions as may be offered at the various times, and the money received therefor, that the same be invested until the sum of one hundred thousand dollars be funded, and they are requested in that event to form such an institution in any State which a majority of them please to select, which is willing to give the proper irrevocable legal guaranty for its permanency, and appropriate not less than one thousand acres of land for the purpose. The income only of the one hundred thousand dollars to be applied in this last case to the support of the institution, and the principal to be transferred to the State, and kept by it invested for a school of this description. If afterwards, a greater residuary sum than this shall be realized, I then direct that the balance, not exceeding one hundred thousand dollars, be offered on the same terms to another State, and so on until the whole residuary estate be thus applied and absorbed in amounts not exceeding as above one hundred thousand dollars to each.

Having ascertained with certainty to my own mind, that almost all political men of all parties are more particularly anxious for personal aggrandizement than any permanent arrangements by which the general standard of popular information may be raised, and thus greater stability be given to the political institutions of our country, I am apprehensive of the same secret opposition which I have experienced and which I know exists to every project of the sort. It is therefore my wish that a printing press, and weekly paper at least, devoted to the purpose of advocating literary information among all classes of people, be established, connected with the institution, and that printing and book-binding in all its branches, form a branch of mechanical occupation of a portion of the students in the institution. It is also my will that a professorship of law be established, and that every student be made familiar with the constitution of the United States and each State in the Union, at as early an age as possible, and to be connected throughout with the moral and religious instructions of the institution. Being also firmly persuaded that the safety of society and its proper moral government cannot be sustained without a high regard for the

present legal domestic relations in life, it is therefore my wish that no illegitimate child shall be admitted into the institutions whose parents shall not have legally intermarried, either before or after the birth of the child, and that such prohibition be made a fundamental law of each institution which may be established under this will. If my life shall not be spared to settle my estate myself, and ascertain its value, so as to know accurately what may be left for this purpose, and also enable me to form a more full and detailed plan for the government and management of the institutions, and the specific appropriations for each object, which, from the uncertainty of the amount, I cannot now do, I leave the manner and extent of the arrangements to the sound discretion of my said trustees, in conjunction with my friends John Savage, chief justice of the State, John Van Ness Yates, of Albany, and John C. Spencer of Canandaigua, whom I solicit to aid my trustees by their counsel and advice in organizing and establishing the said institutions.'

GREAT INVENTION.—The Boston Atlas notices at some length the very important invention, by a young man named Cochran, a native of New Hampshire, of what are denominated the "Many chambered, Non-recoil," fire arms. Through the instrumentality of Mr. G. Gay of Providence, now in this place, we were some time since made acquainted with the properties of this wonderful improvement in the construction of cannon, rifles, muskets and pistols—for to all these the invention has been adapted—and should have sooner noticed the subject, but that we were waiting for an actual inspection of some specimen. This opportunity has been promised; and it is expected that one of the rifles, already sent for by Mr. Gay, will soon be ready for exhibition to those of our citizens who feel an interest in the protection of their property upon the ocean, against pirates or hostile savages.

These weapons are so contrived, that by means of a metallic cylinder, or wheel, revolving on an axis immediately in the rear of the barrel, some twelve discharges may be made in rapid succession; inasmuch that by a little practice, the loading and firing of the whole twelve may be performed in little more time than is now required for a single charge and discharge of a common rifle. This wheel is perforated at the periphery, with cavities or chambers, to contain the charges, of a calibre corresponding with that of the barrel; and the charges are ignited by means of percussion caps inserted in a smaller hole at right angles with the above cavity, and striking the centre of the charge. In large ordnance, the wheel or cylinder revolves vertically; but in small arms it has a horizontal motion, with the lock or igniting apparatus underneath. The wheel passes round by means of proper guides, and as fast as each charge arrives opposite the breach of the barrel, it may be exploded. As our description is derived only from verbal testimony, it may not be entirely accurate, or even intelligible; but we are satisfied that the extraordinary effects ascribed to the invention are by no means overrated or misrepresented.

Mr. G. informs us that he has discharged several hundred shots from one of the rifles; and after the closest attention he could discern no recoil whatever. The cannon may be discharged easily, twelve times per minute—and a succession of loading and firing may be kept up for almost any length of time. The shot are also driven to a greater distance than by the common method; and a less quantity of powder is used in the process.

Respecting the inventor, who is short of 25 years of age, we have the following particulars, which we abridge from the Atlas: Having obtained a patent in this country, he proceeded to England and France, where his invention was readily patented, after a series of experiments made in presence of distinguished naval and military officers, at London and Paris. The Turkish ambassador, who witnessed the tremendous results, induced Mr. Cochran to go to Constantinople—where he was most kindly received by the Sultan, who loaded the ingenious artist with presents, after ordering a twelve pounder to be constructed on this principle, under the inspection of Mr. C. at the public laboratories, and attending in person, with his whole court, at the trial. Mr Cochran resided six months at the Turkish capital, receiving the most marked distinction from the government. He then returned to this country, and established a manufactory at Springfield in this Commonwealth, at which small arms and cannon are now being made, chiefly to order, for sportsmen, &c., or for experiment, by the ordnance officers of the U. States. A piece of brass ordnance is now in course of construction at Troy, and another at West Point, under the direction of the inventor.

Besides the facility and rapidity with which these weapons may be discharged, the rifles, &c. possess many other advantages over all others. There is nothing upon the barrel to obstruct or confuse the sight—the surface being perfectly smooth; they never miss fire, and are little liable to accident. Our whale ships generally carry a number of muskets: but we are persuaded that nothing yet contrived by human ingenuity for security against capture or plunder at sea, can in any shape compete with the implement under notice. We are therefore anxious that ship owners, and others interested at this place, may examine this new and most effectual engine of destruction, and from its peculiar principle of action, judge of its terrific powers. With these deadly instruments, and plenty of ammunition, a single man may disperse a score of pirates, and a small crew contend triumphantly against myriads of barbarians.—[Nantucket Inquirer.]

ON THE IMMERSION OF COPPER FOR BOLTS
AND SHIP SHEATHING IN MURIATIC ACID,
AS A TEST OF ITS DURABILITY. BY
DAVID MUSHET, ESQ.

The durability of copper for bolts and ship sheathing being an object of great national importance, and as there is no better test of its resistance to waste, than immersion in muriatic acid, the following experi-

ments, made thirteen years ago, will, it is hoped, be found not uninteresting.

Small quantities, presenting nearly equal surfaces of each of the kinds of copper described in my last communication, namely, pure shoted copper of the quality from which brass is made, and shots obtained from unrefined copper, were separately immersed in equal weights of muriatic acid. The immersion having been continued for 48 hours, the acid was poured off, and the copper washed repeatedly, and thoroughly dried. The pure copper had lost at the rate of $5\frac{1}{2}$ grains in 100. But the unrefined copper, on being weighed, seemed to have gained half a grain; so that either a mistake must have been made in the weighing, or else a portion of unexpelled moisture had remained in the porous flakes of the copper.

Six ounces of unrefined copper were mixed with three times their bulk of charcoal, and exposed for six hours to a high heat of cementation much beyond what in the absence of the cementation would have sufficed to melt the copper. The flakes of copper were found surrounded by the charcoal, welded together without fusion, and soft and extremely flexible. Six ounces of the pure copper shots were treated in a similar manner, but the result was so far different that no adhesion of the masses had taken place, and the only perceptible change was a slight cracking or bursting upon the surface of the spheroids, which may be considered as a prelude to fusion. Both results were melted down with charcoal and run into iron moulds. The unrefined copper, when cold, was the strongest and softest; a bar of it, about $\frac{3}{4}$ lbs of an inch thick, cut easily across with a knife, and in color and general appearance it very nearly resembled Swedish copper. Another piece was flattened out thin when cold for the purpose of immersion in the muriatic acid. The pure copper was melted in rather a higher degree of heat, and although not teemed until it had assumed a creamy surface, and the crucible had fallen to a low red temperature, it was crystallized throughout the whole fracture. The surface and the fracture of this copper were of a red color; the body weak, and tearing with facility into pieces. Fragments for immersion were cut off and flattened.

The following specimens were then placed separately in muriatic acid.

- No. 1, Pure copper, cut off with a chisel, 53 grains
2, Ditto, flattened, 30 —
3, Unrefined copper, cut off with a knife, $39\frac{1}{2}$ —
4, Ditto, flattened, in which stuck a minute portion of the knife, 45 —

On the morning of the third day the following remarks were made upon their respective solutions:

No. 1, Light green color, very transparent when dashed against the sides of the glass. No. 2, equally transparent, but the green was brownish and not so decidedly cupreous. After continuing the immersion for 48 hours longer, the acid was poured off and the specimens were well washed and dried.

No. 1, That weighed 53 grains, now weighed $39\frac{1}{2}$ grains.

Loss $13\frac{1}{2}$ grains, equal to 25.4 per cent.

No. 2, That weighed 30 grains, now weighed $11\frac{1}{2}$ —

Loss $18\frac{1}{2}$ grains. Equal to 61.2 per cent.

No. 3, Unrefined copper flattened, $39\frac{1}{2}$ grains. now weighed, 19 grains

Loss $20\frac{1}{2}$ gains. Equal to 50 per cent.

No. 4, Unrefined copper bar, 42 grains now weighed, $38\frac{1}{2}$ —

Loss $3\frac{1}{2}$ grains. Equal to 8.33 per cent.

It would appear from this experiment that the unrefined copper resists waste in the muriatic acid, in the same way, and to nearly the same extent, as in the cementation with lime mentioned in my last previous paper.

In corroboration of this fact, we may take the following abstract of another series of experiments, wherein the specimens were weighed three times, at intervals of 48 hours between each weighing.

Unrefined copper, 1st immersion,
lost, 15 per cent.
Ditto, 2nd ditto $8\frac{3}{16}$ —
Ditto, 2nd ditto 6 —

29 $\frac{3}{16}$

Pure copper, 1st immersion,
lost, 25.4 per cent.

Ditto, 2nd ditto 9.7 —
Ditto, 3rd ditto 11.1 —

46.2

In favor of the unrefined copper principally containing tin,—16.9 per cent. Two pieces of copper, the one pure, the other unrefined, were immersed, under similar circumstances, for seven days. The unrefined copper lost 17 per cent., and the pure copper 45 per cent. To ascertain whether the greater indestructibility was owing to the tin which remained in the unrefined copper, I formed a bar of alloy as follows:

Pure copper 2880 grains
Block tin 84 —

a proportion of tin about equal to 3 per cent. A piece from this bar weighing about 183 grains was exposed for seven days in muriatic acid, at the end of which time it was found to have lost 30 grains, or $16\frac{1}{3}$ per cent. The unrefined copper, above mentioned, lost in the same time and under similar circumstances, 17 per cent., which is a striking correspondence. The same piece of tin alloy, at the end of five weeks, was found to have lost in all 76 grains, or $38\frac{1}{2}$ per cent. Pure copper by the foregoing results lost in seven days immersion 46.2 and 45 per cent.

In the first instance I was inclined to attribute the indestructibility of the unrefined copper in the acid, partly to the effects of the charcoal in the cementation, seeing that the effect produced by that operation was much greater upon unrefined than upon pure copper. Whatever advantages may belong to the proper use of charcoal in the reduction and cementation of copper (and

I consider them not unimportant,) the addition of a small portion of tin will be sufficient to account for the superior resistance to waste which this alloy presents in the muriatic acid, over that of the common refined copper of this country. This incapacity to rapid oxidation which is presented by the alloy of tin with copper, suggests many useful hints to the artists and the manufacturers, of which advantage has already been taken in forming ship-sheathing and other articles.—[Lon. and Edin. Phil. Mag.]

AGRICULTURE, &c.

VALUABLE TIMBER.

About five years since, a man named Smith, purchased a number of trees of heavy Locust, in this county, for which he paid as high as seventy and eighty dollars each. The butts were squared and sent to Philadelphia, where they were used in ship building. The price appears extraordinary; but had many of those choice trees been cut up into posts, they would have produced to their owners, nearly, if not quite as much as were paid for them by Mr. Smith. In proof of the correctness of this opinion, we give the following fact:

On the farm of Mrs. Evans, near Marietta, in this county, a yellow locust was felled last season, from which 140 posts were made, one hundred and ten of which were first rate, hewed and morticed, and sold for 50 cents each, and the remaining 30, cullings, fit for board fence, and worth 25 cents each, yielding to Mrs. Evans, *sixty-two dollars and fifty cents.*

The yellow locust is of quick growth, sprouts from the stump, and is natural to the soil of our river bottoms. A grove of this valuable timber, covering three or four acres, will keep a farm of 200 acres in fences forever: and when the trees are at maturity, say 25 years old, will produce more clear cash than 2 years produce of the whole farm.—*Lancaster Farmer.*

[It has always been a matter of surprise to us that farmers who own bottom lands, do not cultivate the yellow locust as a crop, in 12 or 15 years they would produce several hundred dollars to the acre.]—*Ed. Farmer & Gardener.*

FLORIDA ARROW ROOT.

The day, we trust, is not far distant, when prejudices in favor of the productions of foreign countries will cease to operate to the detriment of the agriculturists and manufacturers of our own. We are sufficiently friendly to the policy and principle of free trade, to allow every man to exercise the most perfect freedom in the purchase of whatever he may require; whether the necessities or luxuries of life, at whatever price he may think proper, yet we cannot but lament the blindness or perverseness that will lead any one to overlook an article of home manufacture supplied at comparatively a low price, for one of foreign production in no way superior and truly considered "a dear article." The arrow root, which is the growth of South Florida, may be considered one of the home productions which are sacrificed to

the undue preference for those imported. Equally white, equally pure with that of Jamaica, heretofore deemed the best, and by many thought to be the most nutritious of the two, there can be no reason for its not superseding the necessity of supplying market with any of the articles from abroad.

We have no price current at hand giving the value of the imported article in first hands, but we are well assured that it cannot be imported at less than from two or three times the price of that manufactured in this vicinity, which is from 6 to 8 cts. per lb. With an increase of demand, the aid of machinery would be required, and diminution in price might be anticipated; at present a similar mode of manufacture to that followed abroad is pursued in Florida, though it is probable the Florida manufacturers possess not all the facilities of their competitors.

We are not sufficiently versed in botany to pronounce upon the similarity of the Florida root to that of Jamaica or Bermuda, but there can be no doubt of their belonging to the same family of plants. The quantity manufactured is sufficient for the present demand, and doubtless will increase, as the root is indigenous, and but two or three planters being at present engaged in the manufacture, and that too, in connection with their other agricultural pursuits.

The low price at which the Florida arrow root is sold, allows of its being applied to other purposes than those to which, from its dearness, foreign arrow root was usually restricted. For instance, it is used here almost universally, in the place of starch, and no one can visit Key West without being positively satisfied of the fitness of the substitute. It is so extremely valuable in the composition of many nicities of the table (a fact which have made known for the particular edification of our fair readers, and particularly in an imitation *Best Mung*. It is used by the planters in some places as a bread stuff, and was so used by the aborigines, but do not ask it for so general a use as to have it supersede the use of either wheat or rye.

We shall rest satisfied if our notices secure for the manufactures as great a demand as the goodness of their arrow root deserves.—*Key West Enquirer.*

THE FARMER AND EARL FITZWILLIAM.

A farmer called on Earl Fitzwilliam to represent that his crop of wheat had been seriously injured in a field adjoining a certain wood, where his hounds had, during the winter, frequently met to hunt. He stated that the young wheat had been so cut up and destroyed in some parts he could not hope for any produce. "Well, my friend," said his lordship, "I am aware that we have frequently met in that field, and that we have done considerable injury, and if you can procure an estimate of the loss you have sustained, I will repay you." The farmer replied, that anticipating his lordship's consideration of kindness, he had requested a friend to assist him in estimating the damage, and they thought that, as the crop was quite destroyed, 50/, would not

more than repay him. The Earl immediately gave him the money. As the harvest, however, approached, the wheat grew, and in those parts of the field that were most trampled, the corn was the strongest and most luxuriant. The farmer went again to his lordship, and being introduced said, "I am come, my lord, respecting the field of wheat adjoining such a wood." His lordship instantly recollected the circumstance—"Well, my friend, did I not allow you sufficient to remunerate you for your loss?" "Yes, my lord, I have found that I have sustained no loss at all, for where the horses had most cut up the land the crop is most promising, and I have therefore brought the 50/. back again."—"Ah!" exclaimed the venerable Earl, "that is what I like; this is what it ought to be between man and man." He then entered into conversation with the farmer, asking him some questions about his family—how many children he had, &c. His lordship then went into another room, and returning, presented the farmer a check for 100/.—"Take care of this, and when your eldest son is of age, present it to him and tell him, the occasion that produced it." We know not which most to admire, the benevolence or wisdom displayed by this illustrious man; for while doing a noble act of generosity, he was handing down a lesson of integrity to another generation.—[*English paper.*] *Remarks by the Editor of the Farmer and Gardener.*

The moral taught by the above simple narration of an anecdote, is worth millions to the world, if those who inhabit it would only profit by it. It demonstrates with a clearness, beauty, and force, which challenges admiration and wins respect in every quarter where integrity of the highest order is appreciated, and where benevolence springing from an unadulterated heart can find a response. How commendable the example of the young farmer! how glorious that of the venerable Earl! Such acts are, indeed, praiseworthy beyond all comparison—they are as the salts of the earth, and should teach poor grovelling humanity, even against its own consent, to pursue an upright and honorable course; for it places the expediency of such actions upon the all-subduing ground of interest. By an adage, as venerable as venerated, we are taught, that "honesty is the best policy"—and how happily does the present anecdote illustrate its truth, and exemplify the justness of its philosophy. "Take care of this, and when your eldest son is of age present it to him, and tell him the occasion that produced it"—said the Earl, as he handed the young farmer a check for a hundred pounds. Could advice be more appropriate? "Tell him the occasion that produced it!"—how solemn and how pleasing was the duty imposed upon the father of that son!—our life on it, his eyes glistened with the tear of gratitude and joy—gratitude to the thrice noble and generous donor, and joy that he had been made the herald of news so fulfil of the emanations of the most exalted and estimable attributes of human nature, clad in its best and holiest vestments! We would rather be able to pro-

rent to our eldest boy, a hundred pound note under similar circumstances, on his arriving at his majority, than to have it in our power on our demise to leave him thousands unaccompanied by a deed so savory so hallowed by its purity, and so dignified by all that is lovely in the sight of God or man.

From the Maine Farmer.

CULTURE OF ROOTS—SILK, &c.

Mr. Holmes.—I will now resume the subject of root crops. Although the season is unfavorable yet my ruta baga, and particularly my potatoes look very promising. Much might be said to prove that some respectable farmers of our county, (Oxford) are beginning to awaken; and the probability is, that our State will in a short time rival the mother country in this most profitable branch of agriculture. Much has been written in regard to Silk culture, and I doubt not if these statements are correct, it must be a profitable branch of husbandry; but nevertheless I will give it as my opinion that root husbandry will give employment to the greatest number of laborers. It has been said that one acre of land in Silk will yield, if the soil is suitable for the growth of the mulberry, three hundred dollars. I am perfectly willing that ladies and gentlemen too, should be clothed in Silk, but after home consumption is over supplied, what shall we do with the surplus? I have heretofore mentioned the subject of His Britannic Majesty's Provinces being contiguous to our State; this is indeed fortunate to both countries, for commerce is the handmaid of agriculture, and a beautiful damsel she is too, if you will permit me to write metaphorically a little. In regard to manufactures—if there are but three productive employments, this branch of industry must be of immense importance in every civilized country at least.

I will demonstrate, that if our farmers employ all their capital in cultivating silk, it must be that they pay little regard to political economists. Mankind are so constituted that they must have food or perish, let them be clothed ever so well. The desires and tastes of men happily differ.—What will satisfy one man will only disgust another.

Accordingly we find in all enlightened communities a vast variety of laborers calculated to enhance their own individual prosperity, and of course the public wealth. But I will notice still further the subject of roots. It is said this branch of farming is the great boast of British Agriculture—yes, even in Iceland they are skilful in root husbandry, and in Wales for aught we know may be very skilful; indeed, in this and other branches of husbandry, experience teaches a good school, and fools will sometimes learn in no other. No man of intelligence will doubt the excellency of British agriculture, and no man of common sense, will, if he is patriotic, deny the fact, that we can catch light from our British brethren on the subject of scientific, and I will add practical husbandry. This being the

case, let us notice something in regard to one Cobbett, who was, if report says true, a great cultivator of ruta baga or Swedish turnips. It is said he raised 50,000 bushels or more of this root. An inquisitive Yankee would naturally ask the question, what did he do with them? Of course stock of some kind or other must consume them: beef is very much relished in England and this country too—butter and cheese are also articles of comfort, and are convenient articles of the table. The profit loving Dutch generally manage business economically, and in a manner calculated to acquire the greatest amount of money from a given quantity of land with as little labor as possible; of course inventions, introductions of arts are beneficial to at least civilized communities. We can return a little light for light to our British brethren, let us then be thankful to that Being of beings whose providence has heretofore so signally favored our common country; let us then indeed be not only, united in the excellent cause of agriculture, but use a little energy in putting right those Southern patriots who stand in the way of the best interests of society. It is said that roots given to beef cattle do not yield quite half the profits as when given to milk cows, of course female labor will be highly necessary, not only in the management of dairies, silken manufactories, &c., but various other concerns, and last not least, I think farmers' daughters should be well educated, or at least should spend a few hours every day studying or reading, which will doubtless promote the public interest. Agriculture as a science being made honorable and the young misses in their teens not wholly neglecting or despising it, we may fairly suppose, that being supported by such powerful pleaders, we may calculate on the future prospects of agriculture in our State with pleasure. Accordingly those gentlemen, manufacturers, as I shall term them, who furnish ingenious machines for farmers and those who use them either industriously or skilfully, together with logical and other literary gentlemen who directly or indirectly afford aid to that branch of industry, which I declare to be the foundation of national prosperity, and one of the surest bulwarks of liberty, are entitled to the high considerations of the public.—With regard to manure, our farmers are beginning to think a little on the subject; but alas! does enterprise sleep? are the minds of farmers clouded, or are they blind to their best interests? The Maine Farmer is not a political journal indeed, but then we must conclude that agriculture is the foundation of our national glory.

A YOUNG FARMER OF RUMFORD.

From the Indiana Farmer.

Cincinnati, June 23, 1830.

IMPROVED STOCK.

I have just returned from an interesting visit to Major Clarkson's farm, where I was particularly delighted in viewing his

stock, especially his improved Durham cattle. The Major has some fifty or sixty superior animals, from half to full blood. Those which are not full blood improved short horn, are generally crosses upon the Patton stock, varying, as said before, from one half, upwards. The animals I most admired was the bull Proclamation, a noble animal of pure blood, fine form, and weighing about 2000 pounds; old Hyacinth, a fine full blood cow, formerly belonging to Mr. Gerrard, deceased; and a two year old heifer, which sold at Gerrard's sale for \$595. This is a very beautiful animal, and among other excellencies, has in my opinion, the most perfect hind quarter I have ever seen to a female quadruped of the cow kind.

Much as I was pleased with the view of this fine stock, I was a little disappointed on finding Major Clarkson's late purchases of stock, about twelve in number, at the sale of Mr. Powell, of Philadelphia and elsewhere, had not arrived. Among that stock is a bull of two years old, which cost \$700. I suppose Major Clarkson's stock, with these additions, will be equal to any in the United States.

He will soon be able to furnish the enterprising stock growers of the west, with first rate animals, with which to commence an improvement of their stock.

I much hope the example of Ohio on this subject, will be followed and emulated by the farmers of Indiana. The country is waking up to the importance of improved breeds of stock of every kind. Farmers find but a trifle of difference, after the first outlay of procuring the better breed, between raising a horse that will command \$150, and one that will sell for \$30. They find it as easy to grow an ox worth \$50 as \$15—a calf that will sell at weaning for 50 to 100 dollars, as one that will only command two or three dollars. But I must close this epistle. I go from here to the Shaker village, where you may expect to hear from me again.

Yours &c.

H.

From the New England Farmer.

FARMERS' AND GARDENERS' WORK.

On the use of lime for preserving health.

—Lime is an antidote to contagion, a preservative against infection, and as a means of purifying sinks, vaults, &c., is one of the most useful substances. By making proper applications of this cheap, but powerful agent, together with a due attention to cleanliness and ventilation, the air in jails, hospitals, ships, &c., may be rendered comparatively sweet and salubrious. A quantity of lime while hot and quick scattered every day or two, into the vaults of back houses, and other repositories of offensive matter is indispensable as well to health as to cleanliness.

We should think it a very serious matter if we were forced to eat tainted provisions and drink filthy water; and yet many people appear to be very well satisfied, when, at every breath, they take a substance into their lungs, which is not only nauseous but poisonous. This inconvenience, however,

they submit to, when the remedy is cheap, and almost always to be obtained when and where the evil exists.

The walls of cellars, dairy rooms, sitting rooms, and indeed of all apartments, much occupied by human beings should be well coated with good caustic lime white wash, at least once a year. The time of its application may as well be just before the heat of summer becomes oppressive. In London, says an English writer, a society is organized for the "Cure and Prevention of Contagious Fevers, in the Metropolis," and they have appropriated a certain sum of money for purifying the tainted habitations of the poor. Their method consists simply in washing the walls of the room with hot lime which renders the rooms to which the white wash is applied, perfectly sweet and wholesome. In the villages of New England, the practice of white washing the walls of apartments is common, in cities it is not so usual. The walls of the apartments of our more opulent citizens are usually decorated with costly paper, or something else, which answers as a receptacle for foul air, and which would be spoiled by white washing; and if they prefer finery to health, they must enjoy their own whims, and pay their own Doctors' bills.

Harvesting Rye.—The following rules for cutting and curing Rye are from an old Albany paper. They appear to us to be judicious, and may furnish hints to some young farmers.

Rye ought to be cut as soon as possible after the milk is out of the berry or kernel; then rake, bind in small sheaves and shock in the following manner; Set up four, five, or six sheaves together according to their bulk; then place on a cap sheaf.

In this position the shocks may stand till perfectly dry; then secure them in a barrack or barn, but never mow them on hay. Grain mowed on hay will receive more or less must, which is deleterious to animals of every kind.

Rye cut and secured in this manner is worth nearly double the price of that cut in the common way; the straw will make better fodder than clover, unless the clover be cut when very green, and particularly attended to in curing; the berry of rye will fill in a plump state, and the flour will afford as good bread as we can commonly obtain from wheat.

I have known number of persons who were deceived when eating rye bread from rye thus managed, and supposed the bread made of wheaten flour.

Weeds.—If you have a stock of weeds on your premises it may be worth the trouble to convert them to some useful purpose. We would not wish you in haying or harvesting to devote more time to saving weeds than may be compatible with correct economy. But it may be the case that the pig weed, the purslane, &c., of your garden will make food for store swine, and be worth your attention. Some bury weeds in trenches between rows of plants, and they make good articles in composts. In the latter case it may be well to sift a little quick lime over your heaps of weeds, and then cover them with a layer of the richest

soil you can conveniently obtain to receive the fertilizing gases, given out by fermentation. A good husbandman permits as few vegetable and animal substances as possible to decay and putrify in the open air, but covers them with earth and quick lime if he has it, thus preserving his health by the same means by which he fertilizes his grounds.

From the Genesee Farmer.
BREAKING VICIOUS COWS.

BY C. P.

Mr. Tucker—I noticed an article in the 27th No. of the Genesee Farmer, describing the manner in which a "vicious cow" was reclaimed. I think such instances very rare, for I have known many men to possess vicious cows for years, who never read nor never thought of their being reclaimed; it was the same thing year after year. They thought as much before hand of the job of attending to them, as of any other work they had to do. Milking, as far as my experience has extended, is considered one of the most, if not the most, unpleasant chores there is to be performed about a family, and above all things a kicking cow is to be dreaded. She is always worse in the worst weather, and one is in danger at every milking time of losing all the profits of his labor, unless he can content himself to go through with some operation of making her secure where she can do no injury.

I should be very much in favor of breaking vicious cows when it is practicable, but I believe the attempt is seldom successful. I think it is the best way generally to dispose of them for beef, unless a man has a very valuable one, which will well recompense the labor of keeping her. But such an animal as a vicious cow a man never ought to raise—there is no need of it. If one necessarily comes upon his hands already made vicious, he is not to blame. I have long thought that there was a great defect in the mode which some farmers use to break their young cows. We never should undertake to milk a heifer out in the lot, or in a corner either of the open field or of the barn-yard, where there is any chance for her to escape, and oblige us to have a race before we can again go on with the operation of milking. One such attempt may spoil her for a gentle cow, for she will long recollect it, and will be doubly worse to manage the next time. I have heretofore passed by farm-houses, and seen two or three great lusty fellows to work in this way, paraded around a corner of the yard, each holding some sort of a cudgel in his hand, raised over the apparently harmless young heifer, while she stands to be milked, half scared, and trembling prodigiously for fear of the expected blow.—Now this is all wrong, and entirely unnecessary. They very much mistake the nature of the creature—she is not so to be tamed. It is the regular course to make her vicious and ungovernable, and it will need but a few such operations.

I will suggest a plan which I invariably followed for four or five years with trium-

phant success, and when I changed my occupation, transmitted it to my successor with a special charge not to depart from it, during which time, and since which, (for I have been an eye witness of its faithful fulfillment,) I did not know, nor have not known, one single subject of its operation but what was or has been of the most harmless and peaceful disposition, so that man and boy, woman and girl, all, could perform the task of milking with equal ease and in equal security, either as it respects themselves or their pail of milk. And in such a case, every cow must not have her particular milker, whom when he is necessarily absent, or in any wise rendered incapable of performing this his ordinary labor, it requires two or three a half of an hour with clubs and stones, racing to and fro across the yard, to obtain her milk, or else she must go unmilked until her former master returns, or is sufficiently recovered to again enter upon his task. Some may have been acquainted with the plan long ago, but many to my knowledge do not now know it, or if they do, do not practice it: Drive the heifer and her calf carefully into the shed or stable, tie one end of a rope loosely around her horns, fasten the other end firmly to some post or staple, giving her a short play, and there let her stand.—Mind and not take her into any strange place, where cattle are not used to going. If she was accustomed to be led when a calf she will stand still, if not she will flounce around very briskly a short time at the length of the rope, but soon finding by experience that all is fast, she will immediately cool down. Then place before her a little mess, and commence milking while she is eating. Let there be no whip about, let there be no noise or blows, but every movement around her gentle and still.—When the operation is completed, carefully untie her, open the door and let her out. One person is sufficient for the whole. Two is one too many, especially if she is a little wild, which however, ought never to be known among a farmer's cattle. She is now a cow, subdued and manageable,—all it requires is a few more such lessons, and I have the confidence to believe, from some experience too, that with a proper milker she will ever afterwards remain a gentle cow. She will be perfectly tame, so that you can lead her as well as a horse, and approach her in the field as well as in the yard.

There is a fault with some of our farmers in trusting the breaking of their heifers, and in fact the whole care of their cows, to boys. As a general thing they are not competent to perform the labor as it should be performed. It is often the case that they will get fretful while milking, and punish the cow most unmercifully when it is not due. The man should keep an eye to these things and see that all goes on in a proper manner. There is one universal fact occurs, and to which I presume hundreds can witness, when the management of the milk-yard is solely in the hands of boys—an immense deal of rubbish, clubs, broken rails, and strips of boards, and especially stones in abundance may be seen

scattered all over the yard, and in case one wishes to correct his cow, he finds every thing in readiness. I have before now seen loads of such rubbish collected around farm-yards, and truly it does not present a very neat looking appearance. Those farmers, therefore, who cannot well take the management of these affairs to themselves, if they wish to have their cows thrive, keep in good order, and gently treated, are advised to keep their yards clear of all these weapons, so as to remove even the temptation to evil. And nothing will give a stranger a better opinion of a farmer as he passes by, than to see every thing look neat and clean around his dwelling and barns. From this circumstance he will draw the inference, that it is so all over his farm, and he will always call that man a *neat* farmer.

H—, July 16, 1836.

From the Genesee Farmer.

INFORMATION WANTED.

BY A YOUNG FARMER.

Ever since the introduction of the Saxon Merino into the country, there has existed a considerable difference of opinion among the breeders of sheep, and wool growers, as to their relative value, when compared with the Spanish Merino previously existing among us; some maintaining that they are more profitable than the Spanish, while others as strenuously contend that the advantage is on the side of the latter. The advocates of the Saxony breed insist that the superior fineness of the wool and the consequently higher price it commands, will more than compensate the deficiency in quantity of fleece, lightness of body, and tenderness in keeping, charged as faults upon them by the friends of Spanish Merino.

As wool growing is becoming an important and profitable branch of American industry, it is very desirable that the points in controversy between the two breeds of sheep should be early and correctly settled, that those who are entering upon the business may have certain data to go upon, and not encounter the losses usually attendant on undigested speculations. The points of difference which should be settled, and on which we as farmers require information, may be included in the following queries, viz: Does the Spanish Merino on the average clip a greater amount of wool than the Saxony; and if so how much? Does the Saxon wool on an average command a higher price than the Spanish; and if so, how much? Is the number of sheep lost—the average number we mean—greater in a year in one hundred Saxons, than in one hundred Merinos? Is the number of lambs raised from one hundred Merino ewes greater on the average than from the same number of Saxon ewes?—and if so, what is the rate of difference? Does the Spanish Merino usually weigh more than the Saxon, and for slaughtering command a greater price?—and if so, what will be the average difference between the weight and value of one hundred of each kind? In all these queries and estimates, it will of course be understood that full blooded animals of each kind are intended.

There have already been a number of excellent articles on sheep given to the public in the Farmer; but they relate principally to the best mode of treatment, diseases, &c., and do not enter fully into the points suggested above, and on which at the present time information is particularly desired. Some few writers have incidentally touched them, and to show what the opinion of some practical men has been, we give here an extract or two from some communications. Mr. Z. Barton Stout says—"In proportion to my ewes I have not succeeded in rearing an equal number of lambs for several years past, as I did before the intermingling of the Saxon sheep." "It is well known that some large flocks along the Genesee river, have, for some years past, deteriorated rapidly; and it is not unworthy of inquiry, how far the cause assigned, (the introduction of Saxon blood,) may have occasioned this deterioration." Mr. Jarvis, of Vermont, whose opinion may be relied on in this matter, he having been for a great number of years extensively engaged in sheep and wool growing, says, in an article in Niles' Register, speaking of some pure Saxon imported sheep, "I put eight of these bucks to three hundred Merino ewes, and the progeny was more feeble than I ever witnessed from Merino bucks. I did not raise more than three lambs from five ewes, for two successive years; and in putting full blood Saxony bucks to the ewes thus crossed, I have not raised more than two lambs to five ewes. I have been still more unsuccessful in raising lambs from the full blood Saxon ewes and buck, although they have been rather better kept than my other sheep. From my full blooded Merino stock, my increase was commonly nine lambs to ten ewes, and never less than four lambs to five ewes, and my Merino bucks had always been selected for fineness and weight of fleece, and shape, from my own stock." As a reason for this difficulty of rearing, Mr. Jarvis says—"The form of the sheep will satisfy an experienced agriculturist of the true cause. They are long legged, thin quartered, flat sided, narrow boned, not sufficiently deep chested, and long necked. All domestic animals of this shape have feeble constitutions." The cause assigned by Mr. Jarvis for this constitutional defect is this: the persons employed by the elector of Saxony to make the selections from the Merino flocks in Spain, made fineness of wool the principal object, "and selected the finest woolled sheep without any reference to form of carcass or weight of fleece. In this they have succeeded, for the Saxony wool is certainly finer than the Spanish; but the latter will yield, sheep for sheep, one third more in weight of wool."

Perhaps the experience of the writer of this is too limited to justify the expression of an opinion; yet so far as it extends, it would seem to establish the principles laid down in the above extracts from Messrs. Stout and Jarvis. There can be no doubt that among the subscribers to the Farmer, there are a multitude of practical men, whose experience in sheep raising and wool grow-

ing, amply qualifies them to impart to others the information so much desired, and which would at once settle those questions which now perplex so many farmers. If such men would now and then devote an hour to the recording of facts connected with their experience in farming, and particularly to the queries mentioned above respecting sheep, and give them to the public through the medium of the Farmer, we are confident they would receive the thanks of the farming community, and from no individual would these be more sincerely rendered than by a YOUNG FARMER.

From the Genesee Farmer.

COW-YARD FROLICS.

BY J. B. B.

How many lamentable as well as laughable scenes I have witnessed in the cow-yard, when good management would have produced a flowing pail of milk, quietly and peaceably drawn from the cow, with ease and comfort to her, and the milker satisfied and thankful. There are different ways to do the same thing, yet but one way that is right, and that is the *best* way. For instance, you have a cow with sore or cracked teats, from which when milked the blood will ooze out between the fingers. This must necessarily be very painful to the cow; but never mind that—she must stand or take a drubbing. Heedless that a cure might be effected in a very short time, with very little trouble, the cracked teats are left to get well as they may. Now, "Old Kick" is a very high strung cow, and full of mettle, and will not stand such treatment. She kicks and runs occasionally, and occasionally gets a flogging to pay for it. However, she continues to kick, because she is hurt, when milked, until the habit of kicking becomes a kind of second nature to her, and then look out for trouble afterwards. The milker commences milking her, she chews her cud, looks good natured, and every thing appears as though it was to be done decently and in order.—But the scene soon changes, for "Old Kick," not liking some movement, introduces her hoof against the side of the pail, (if not into it,) and turns it topsy-turvy, the pail rattling and the milk flying. "Old Kick" now expects a flogging, so off she starts full sail. The provoked and angry milker pursues her with the first club or stool he can get hold of, and now for a chase. Round the yard they go at full speed, (which frequently starts the other cows, and over goes another pail of milk,) until "Old Kick" is overtaken, and then the club or stool is set in motion upon her sides, the sound of which is not unlike the sound of the thrasher's flail, which makes the woods resound with its echo. "Old Kick" is now cornered up, and has to take it, (showing her *good will* by kicking now and then, and shaking her head,) till the milker considers her thoroughly subdued, and then commences again to milk. Ten chances to one if he has not to go through with another performance like the one just mentioned, before "Old Kick" is set at liberty until the time for another milking. Now, the right way would have prevented all this

trouble, and "Old Kick" would have remained as she used to be, not the worst of cows. The first step would have been to have cured her teats, which is very readily done by washing them with cold water, and then applying a little *linseed oil*, for a few milkings,—(an effectual cure.)

I had the misfortune to be milker of a cow, ("Old Kick" was her name,) for two or three years, which had been trained as above mentioned. She was as bad as bad could be, as split pails and sore shins would at the time have testified. She was for the first two seasons gentle and kind, and was considered a very excellent cow. She was then sold, and probably by bad management, either by having sore teats or some other cause, became, as I have stated, as bad as bad could be. The purchaser was accordingly dissatisfied with his bargain, and the seller not knowing the reason, and considering her well worth the money paid for her, gave the man his money and again took the cow. Many has been the frolic I have had with her, for hardly a night or morning passed without a chase, and nothing short of a good threshing would induce her to stand still and be milked. At length I invented a plan which ended the flogging business, and "Old Kick" was completely under my control. I made a small pen and drove her into it, having prepared a strap with a buckle at one end, and buckled it around her hind legs. I then let her manœuvre to her own satisfaction, and finding she was fast, she accordingly gave up, and I milked her without even one attempt to kick. She soon became willing for me to buckle the strap without choice of place, and I had no more trouble afterwards, otherwise than keeping a strap in readiness. I tried several times to milk her without fastening her legs, but she soon convinced me she had not forgotten her old pranks. I used the strap two years; she was then fattened and sold to the butcher, and thus ended the life of "Old Kick."

To me no part of the farmer's stock looks more grand and beautiful, as well as lucrative, than a number of sleek, handsome and stately cows, yarded for the purpose of milking. See them! How majestic they look! Their large and handsome bags, furnished with clean and nicely shaped *handles*, and then to draw an overflowing pail of the white and foaming liquid. What can be more delightful!

In my opinion, farmers in general do not make it sufficiently their interest in the selection of their stock, especially those for the dairy. In the first place, the best breed should be obtained, and then a selection should be made of such as are kind and gentle, with another very necessary appendage, viz: sizeable teats. We have a young cow at the present time, and, to speak within bounds, I should not think her teats exceeded one inch and a half in length. The other day I had occasion to milk an old ewe, which had lost her lamb, and am confident her teats were tuff as long, and I think for choice I had rather milk her! Now I should charge in the course of a season to milk such a cow the extra time, well as trouble and perplexity taken into

consideration, full as much as the butter or cheese made from the milk would be worth. The better way I think would be, if necessary, to buy a cow furnished with better teats, (even upon credit,) and let the calf run with the former until old enough to wean, and then fit her for market.

Once more, and I conclude. As it is a very easy thing to spoil young cows, even by a few milkings at first, by bad management, due care should be taken, and the best method pursued. We have found it the most advisable in breaking heifers, to make a small yard and drive them into it, when milked, for a short time at first. If they show any disposition to be obstinate or sulky, the better way is to coax them and treat them gently; they will soon yield, and you will gain their affections, and be blessed with good and gentle cows.

J. B. B.

Ledyard, July 2, 1836.

From the Maine Farmer.

SCYTHE MAKING.

Mr. Holmes:—I have long been convinced that the Temperance reform was exerting a salutary influence on the three great interests of New-England; but never till of late have I been fully aware of the extent of the reform in the great manufacturing establishments, or the amount of good which has resulted.

During a late excursion in Massachusetts I have visited a large number of factories and workshops, and, through the politeness of the proprietors or their agents, have been informed of the principles on which they are conducted, and permitted to observe the several operations. I propose, as I may find leisure, to communicate to the public, through your highly useful paper the results of my observations.

The first factory I visited was a scythe factory; I shall therefore make the manufacture of scythes the subject of my first communication.

Most of your readers have probably used scythes stamped with the name of "Farwell," and have found them to deserve the very high reputation they have enjoyed for more than forty years. Mr. John Farwell, the original manufacturer of these scythes, is still living and actively engaged in the business, which he commenced so early as 1794. Prior to that time, and indeed long after, most of the scythes used in this country were imported from England and Holland. Farwell's scythes however soon entered into successful competition with the foreign article, and have continued to do so to the present time.

There are two branches of the scythe factory of Messrs. J. Farwell and Co.; the one situated in Chelmsford in the county of Middlesex, and the other in Fitchburg, in the county of Worcester. The two shops give employment eleven months in the year to about 24 men. The iron used is the best Russia Old Sable, and the steel, either Cast Steel or German Steel of the first quality. There are twelve operations in making a scythe, each of which are performed by one individual exclusively.

The first operator takes a piece of iron

5 inches long, 2½ inches wide and half an inch thick, this is heated and drawn to the length of 15 inches, or thereabouts; it is then bent over and doubled and a bar of steel, weighing half a pound and of the same length as the doubled bar, is inserted at one side. The whole is then welded and drawn to the length required. The second operation is that of drawing the bar to a point. The third consists in plating it to the required width. The 4th in crooking the point ready for the forming or swedging machine. 5th, in turning the back and swedging the web. 6th, in turning the heel. 7th, in tempering and straightening. 9th, in grinding. 10th, in adjusting the edge and inspecting, which is usually done by the master workman. 11th, in varnishing. 12th, labelling and preparing for market. Recently these gentlemen have introduced the use of mineral coal in their forges, and one of the firm is the patentee of the "concave sett." By these two improvements combined, the expense of manufacturing the scythes is materially diminished, and the danger of separating the back from the web, in grinding, is avoided. In each of the shops there is a blowing machine, by which means of pipes, communicates with the numerous forges, and keeps up the degree of heat in all. All the machinery is driven by water power, and in both factories not less than 2500 dozen scythes are made annually.

In examining the works, I was much pleased with the neatness and order which prevailed, and with the air of cheerfulness and health which was apparent. In answer to my inquiries, on this head, the Messrs. Farwell and their partner, Mr. Simonds, informed me that they conducted their factories on the most rigid principles of temperance. They furnish no intoxicating drink to their men—they decline giving employment to any man who is known to use spirits as a drink, either habitually or occasionally. The results of this prudent arrangement is that the work is done in the best manner and in season, and there are no quarrels, nor misunderstandings. Every one knows his duty and performs it—every one understands his own rights and respects those of his employers and shop-mates.

Here, then, Mr. Editor, is another proof that intoxicating drinks are not necessary for laboring men, even when engaged in the most arduous employment, and exposed to opposite extremes of temperature. It is not, however, a solitary proof. A large proportion of the manufacturing establishments in Massachusetts are conducted on the same principle. We sometimes hear of *reaction* in the temperance reform, but I saw no reaction in Massachusetts, on the contrary the cause seemed to be everywhere gaining friends, and I doubt not that, built as it is on the truth, and connected as it is with the best interests of all classes in the community, if reasonable efforts are made by its friends, it will continue to triumph until, at no distant day, alcohol will be confined to its appropriate place—the shop of the apothecary.

A TRAVELLER.

From the New-England Farmer.

NORTHERN EXPOSURE TO FRUIT-TAR- RING TREES INJURIOUS.

THOS. G. FESSENDEN, Esq.

Dear Sir—My own garden is an inclined plane, facing, as we say, to the north west; I have found from observation, during five successive years, that vegetables on land of a southerly aspect have been affected by frost, when those of the same kind in my garden were untouched. If the fact be true, I would ask what philosophical principle must be summoned to give an explanation.

I would state a fact, showing, as I suppose, the effect of Tar upon fruit trees. My neighbor and I owned two adjoining orchards, the cankerworms have visited them without mercy for eight successive years—my neighbor tarred his trees in the usual way, mine were many of them large, and taking into the account the expense and trouble and chance of injury from the tar itself—I suffered the insidious invaders to range unmolested. The last season the worms were few compared with preceding years, and many trees were permitted to produce as they were wont. My neighbor's trees abreast of mine, of the same age and kind, bore but sparingly, while mine produced in great abundance—the tar must have been the cause.† This matter is, no doubt, well understood, but as it came under my own eye, I pass it to you; it may not be useful to publish.

Yours truly,
JOSEPH HARRINGTON.

* BY THE EDITOR.—The following remarks originally appeared in the Hampshire Gazette. President Dwight, in his "Travels in New-England," &c., says, the common opinion that tender plants and fruit trees ought to be placed in a warm southern exposure, to preserve them from frosts is erroneous. He adduces many facts to prove that fruit trees should be planted on north western, northern, or western declivities, where they may be exposed to the north western, northern, or western winds. A white frost being merely frozen dew, the great object should be to keep the dew from resting on the plants. This can be effectually done only by exposing them to the free access of the north western wind, the source of almost every white frost. Plants from which the dew is swept away by this wind will escape; while those which, by being sheltered from its current, retain the dew, will be destroyed. Major White, of South Hadley, had an orchard on the north western declivity of a hill, exposed to the strong winds that blow through the gap of Mount Tom and Mount Holyoke. These winds swept the dew from this orchard so effectually, that its blossoms regularly escaped the injuries of such late frosts in the spring as destroyed those of the surrounding country. The inhabitants of South Hadley styled such a frost *Major White's Harvest*, because in such years his cider commanded a very high price. A Mr. Lyman informed President Dwight that in his garden, which was exposed to the north west winds, the white frosts had never done any injury to the vegetable. See N. E. Farmer, vol. v. p. 348.

Another advantage in a northern exposure is obtained by its keeping vegetation back till late in the spring. If vegetation commences early, subsequent frosts congeal the sap in its pores, and kill the young plants by bursting or tearing its fibres; as a glass or earthen vessel is broken by water being frozen in it. See N. E. Farmer, Vol. v. p. 260.

† The following process has been recom-

mended for defending trees against canker worms. A strip of linen, or canvas, is put round the body of the tree, before the females begin their ascent, and well smeared with tar, &c. The design of the strip is to prevent the tar from coming in contact with the tree, which always injures it. See New American Gardener, Art. Insects. A gentleman informs us that in Plymouth, Mass. they make use of the following mixture as a substitute for tar, in preserving fruit trees against canker worm, viz.: White varnish, soft soap and whale oil, one third of each, to be mixed and applied at the times and manner of the usual application of tar for the same purpose. The advantages of the mixture, we understand, are, that it is not so soon hardened by the weather, and of course need not be so often applied, and does not in the least injure the trees to which the application is made.

From the Cultivator, for August.

DIFFUSION OF AGRICULTURAL KNOWLEDGE.

MY DEAR SIR—I wrote you a short letter from Pennsylvania, on the subject of the sugar beet; in passing through Ohio, Kentucky, Indiana, Missouri, Illinois and Michigan, I have stated to many intelligent and wealthy individuals, the value of the sugar beet, and I am glad to inform you, that a general feeling prevails, that a new and important product is about to be introduced, which will be a source of vast benefit to our country. All that is now wanting, is information; when that is diffused, capital and enterprise are ready in abundance, to undertake the manufacture. I find that the good and enterprising everywhere are deeply impressed with the importance of the universal diffusion of information that will tend to improve husbandry, education and temperance. Your excellent paper, the Cultivator, is becoming a mine of wealth to farmers—could each one be induced to subscribe for it, I will venture the opinion, that he would derive advantages over the cost a hundred fold.

I have frequently forwarded a copy of our temperance papers to each post-master in the Union, with the hope of interesting them in the cause, and inducing them to act as agents. The consequence has been, they have, as a class, been among our most valuable friends, for procuring subscribers and transmitting money.

It is of such vast importance that the farmers in all parts of our country, especially in the new parts of it, should have your paper, that I wish you would forward one of your first numbers to every post-master in the United States, with a short address, calling attention to it, and soliciting each to act as agent. The low price of the Cultivator, its valuable contents, and the profits (if any) derived from its subscribers, being entirely devoted to advance the general interests of agriculture, will commend it to universal patronage, when known and appreciated. For the expense of this distribution, you may call on me.

I am, dear sir, respectfully yours,

E. C. DELAVAN.

Chicago, June 23, 1836.

From the Cultivator, for July.

PLANTING—NO. 1.

Trees give to a farm half its intrinsic value. Without trees about it, a farm looks naked, cheerless and uncomfortable; and without trees man enjoys but a modicum of the blessings which providence has destined for his use. Trees are the farmer's

resource, in most cases, for building, for fencing and for fuel. About farm buildings, they afford shelter, and are conducive alike to health and beauty. In the orchard and garden, they are sources of interest, of luxury and substantial profit. It is announced in a late Northampton paper, that Captain Hale, of that vicinity, had sold thirteen locust trees for \$153, and a red oak for \$30; and that a white ash, which grew in that neighborhood, when converted into plank, brought in market the round sum of \$70.—Besides their intrinsic value for timber, and fruit, the judicious planting of trees, in open and exposed situations, "improves the general climate of the neighborhood, the staple of the soil, as regards the gradual accumulation of vegetable matters, affords shelter to live stock, promotes the growth of pasture and corn crops, beautifies the landscape, and thus greatly and permanently increases the value of the fee simple of the estate and adjoining lands."

"What is your age?" was the interrogatory which an eastern prince caused to be put, by one of his attendants, to a very old man, seated by the way side. "I am four years old," was the reply. "Do you intend to insult his majesty?" was the rejoinder. "No, may please your majesty—it is but four years since I began to live, as I ought, for posterity—since I first planted a tree." According to this definition of living for posterity, but comparatively few of our countrymen have begun yet to live; for instead of planting, their study and occupation have been to destroy trees. But every consideration of interest and comfort admonish us, to change our habits in this respect, and to provide in time for the wants of posterity. The old settled States are already experiencing a scarcity of wood, and they contain vast tracts of land, now in a great measure unproductive, which, if planted, would in a few years yield a profitable return in wood, and the great Prairie West is rapidly filling with a population which will soon exhaust its spare woods.

Planting woodland may be regarded as a new business with us, though the Massachusetts agricultural society have endeavored to encourage it by liberal premiums, and individuals, in different parts of the Union, have directed attention to it. It is related of a farmer on Long Island, that he planted a hundred locust trees on the birth of each child, and that the proceeds of the hundred trees, when the child became of age, afforded it a handsome outfit. It is a branch of rural economy which we must begin at some time, and the sooner we begin the better. Many districts on the old continent have become desolate, and almost uninhabitable, in consequence of the total destruction of the wood. This is the condition of many tracts in Asia, in Spain, and in the environs of its capital, and even in Russia. In speaking of the maize and vine district of that empire, lying upon the Black sea and the confines of Turkey, a late writer, said to be a Russian statesman, mentions as a great defect of this region, the almost total absence of forests: and he recommends the planting of larch and other quick growing trees in spots where the soil is suitable, and sheltered from the strong blasts which sweep the plain; to rear other plantations under shelter of the first; and the planting of trees near farm houses, and villages, round the fields, along the roads, and especially in the ravines, as means of ameliorating the climate, and increasing the productiveness of the soil.

The planting of forests and ornamental grounds, has long been practised in Europe,

particularly in Great Britain, where it is sedulously encouraged by statesmen as well as landholders. It has contributed much to beautify the country, as well as to improve the productiveness and profits of the soil. Some idea of the extent to which it is carried may be formed from the facts that in the twenty-seven years between 1802 and 1829, the Duke of Bedford alone has planted upon his estate, 1,540 acres of ground, with five millions seven hundred and thirty-five thousand trees, exclusive of 680 bushels of acorns and other seeds put in with the dibble.

The business of planting, like the culture of turnips, or any other new branch of rural economy, seems much more formidable and expensive in prospect, than it turns out to be in practice. It may be managed upon every farm, with but trifling expense, by the ordinary laborers. Seeds of our forest, ornamental and fruit trees, may be readily gathered at the proper seasons; and under the plain directions which we intend to give, they may be sown, and trees reared and planted and grown without difficulty.

It is not our intention, in these remarks, to say any thing of trees exclusively ornamental, or particularly belonging to the orchard or garden, except to express a hope, that at least orchards already existing may be spared from the axe, if not for the liquor they afford, or the important material of diet they furnish in the kitchen and in the dessert, or at least for the profit of the proprietor, in feeding and fattening his pigs and other farm stock. Ample and indisputable testimony has been recently afforded, that the same area of land is far more profitable, for feeding farm stock, in an apple orchard, than it can be made in growing for them grain or roots. Our present object is to make some brief suggestions on planting forest timber, particularly for the benefit of our subscribers in the Prairie West, where, if we understand the condition of the country, this ought to be one of the first subjects that should engage the attention of the settler.

From the New-England Farmer.

RAISING CHICKENS.

The following is a valuable article and relates to a branch of rural economy, which deserves more attention than it has received in this country. Further favors of a similar nature from the same hand are respectfully solicited.

MR. FESSENDEN,

Sir,—In one of your late papers I saw mentioned a successful way of raising chickens,—I have been in the habit of raising them for some years, and if you think favorably of the mode I have adopted, you can insert it in your valuable paper.

I keep my hens warm under cover during the winter, and feed them on "Brewers' Grains" placed in an open box or tub, that they may eat when they please, occasionally giving them oats, corn, and oyster shells pounded fine, and plenty of water—by keeping them warm and well fed, they begin laying earlier in the season. I prefer spring chickens, as they lay earlier than old hens—and the old hens to set, as they make the best mothers. I take care the eggs do not get chilled with cold, and keep them in a warm place in my house. When three or four hens want to set I put from thirteen to fifteen eggs under each of them, according to size—the day of the month marked on each egg—and after the hen has set a week or ten days I examine them by holding the eggs to a crack or knot hole in a board

when the sun shines through, and if I discover any rotten ones, I take them away and replace them with fresh ones marked as before mentioned. When the chickens are all hatched I put two or three of the broods to one end, in a coop with an opening against an empty barrel placed on the edge, and with a little care, when put in the coop, the hen may be made to brood them at the further end of the barrel. In that way the chickens that are not covered by the hen huddle together around her, and keep each other warm. The hens from which the chickens are taken I put into another coop, and in about a fortnight they will begin to lay again. The hen being confined in the coop, will leave her chickens much earlier than if left to run at large with them, and the chickens will become so accustomed to going into the barrel and huddling together, as to be quite contented to give up the hen's brooding them. After the chickens are two or three weeks old I remove them with the coops into my garden, where they feed upon insects, so as to require but little food—but do not keep them there until they are large enough to injure the garden.

I feel persuaded that in the way I have proceeded, our market could be supplied with an abundance of poultry, and I recommend it with confidence, if managed with care and attention, as profitable to those who may engage in such business.

Charlestown, July, 1836.

CLOVER LEYS.

It will undoubtedly be remembered that innumerable experiments have proved that clover leys, turned under, make an admirable dressing for a crop of wheat the next year. Clover, if we mistake not, is a biennial—that is, lasting but two years, after flowering and going to seed the second summer, the roots begin to decay, and ultimately die out and leave the soil for the Herd's grass, or other plants which may be sowed with the clover. Hence it will be well, in order to make the most of the roots as a dressing for wheat, to plough them under as early in the season after haying as can conveniently be done. By the following spring the sod has become decayed, and in a good state to promote the growth of the future crop.

From the New-England Farmer.

FARMERS' WORK.

A writer in the New-England Farmer who dated from Lynn, and used the signature "*A Farmer*," made the following remarks:

"I destroyed what few thistles I found on my farm last year by some refuse beer brine, without the trouble of cropping them down; though I think it best to crop them even under ground. Indeed the cropping or cutting down should be attended to before this time of the year, [fore part of August] if nothing more is done in order to prevent their spreading. Its downy seeds are now in this vicinity wafted about in the air by every wind—they just begin to be let loose, and will propagate far and wide. It is matter of astonishment that so little attention is paid to the subject. Farmers were informed several years ago, of the efficacy of the above method of destroying the thistle, or one quite similar

in Vol. II, p. 411 of the New-England Farmer, and yet they still neglect to make use of it."

The following is an extract from the passage alluded to: "Cut off each thistle about half an inch below the surface of the ground and then pour on it a gill of coarse salt. Fish brine may be used instead of salt, and will answer the same purpose. If in a bed of thistles a few should escape the first year the above operation should be carefully performed on them the year following. The summer season, when the thistles are in full growth is the proper time for doing the business."

A correspondent of the New-England Farmer, with the signature "*Rusticus*" Vol. VII. p. 137, ridicules the idea of destroying thistles by salt, as advised by the writer of the above article. Rusticus observes that "Philosophy as well as experience conclusively proves that mowing thistles off two or three times in a season, particularly when in blossom will effectually destroy this pest of our farms, without the application of a gill of salt. Repeated defoliation will destroy any tree or plant with which I am acquainted.—Leaves are necessary to the growth of plants, and they cannot live without them in summer. A few years ago, whole forests of sugar maple were killed by the caterpillar destroying their leaves about midsummer. The white mulberry is very tenacious of life, and yet were it entirely and repeatedly stripped of its leaves it would die. I have lost hundreds of young plum and cherry trees the last summer, by small black lice which attached and destroyed the foliage of the new budded stock. Leaves are to the vegetable what the stomach is to the animal, the organs of digestion, which converts food into nutriment, and without this nutriment the plant nor the animal cannot long subsist. The Canada thistle has diminished in West Vermont nine-tenths within my recollection. They are annually cut above the ground, and have not, I believe, been dosed with salt or pickle.

To this it was replied by our friend of Lynn, as follows: that destroying thistles by his method is not mere theory. "I have destroyed them with brine and without even cropping—nor do I believe the cropping essential. As to the expense, I should suppose a horse load of salt, which I have seen sold at the wharves for one dollar and fifty cents, being salt which had been used for salting imported hides, would be sufficient to destroy the thistles of least half an acre, and a man would perform all the labor required in three hours.

"I have seen the method of mowing them several times in a season, practised several years in succession in Ipswich, where they abound; and could perceive no other effect than a tendency to prevent their spreading. As to your correspondent's philosophy of defoliation, to destroy trees and plants it may be correct as respects some species; but pray what will he charge to come and destroy

by this process an acre of my barberry bushes, blackberry vines, or of the various kinds of bushes that infest our low lands! These I have cut in the height of their vigor, without much effect, but have seen the same killed with salt without much trouble. I doubt much if the common willow would be destroyed by divesting it of its foliage at any season. If cutting a plant so tenacious of life, as the thistle will kill it, how extraordinary it must be that our tender grasses, (most of which are cut in the bloom, and often more than once in a season) are not destroyed by this means.

It is well known that some shrubs, such as the Chinese Mulberry, the Box, the Willow, &c., may be cut off, or headed down for an indefinite period without effecting their destruction. Old pastures which have been cropped for many years produce better and sweeter grasses than are obtained from land recently laid down to grass. Garden vegetables, used for salads produce more as well as better foliage for seasonable cropping. Cropping thistles in the blow, we believe, will not at once extirpate them, but it will prevent their being propagated by seed, and thus infecting a whole neighborhood.—In many cases, where the plague of thistles is limited to small locations we believe that the application of strong solutions of salt will be the cheapest as well as the most effectual mode of destroying them; but in all cases thistles should be cut in season to prevent their being propagated by seeds.

From the Cultivator, for August.

MATTERS OF INTEREST TO ALL.

We venture to lay down the following propositions as adapted to our day and country:

1. *Every business in life is mainly dependent, for its prosperity, upon the labors of agriculture.*

Agriculture is the body, while the other professions are the members; and although the body and members are mutually dependent, and reciprocally useful to each other, the body can exist without the members, much better than the members can exist without the body. The farmer can supply his necessities, and most of his reasonable wants, within the circle of his family; he can feed and clothe himself: but his wants are enlarged, and his ability to gratify them increased, in proportion to the profits of his labor. If through ignorance or sloth he produces only what is necessary for the sustenance of his household, he can buy neither of the merchant, the manufacturer or the mechanic,—nor contribute to the support of the learned professions; or, if he buys, he cannot pay. But if his produce is double what is required for the consumption of his family, the surplus half may be employed for the benefit of the other classes—in purchasing from them the comforts and elegancies of life. The other classes, on contrawise, cannot thrive, as such, without the aid of the farmer: he furnishes the raw materials for the manufacturer, he feeds the mechanic, and freights

the bark of commerce; and is besides the principal customer to them all. It follows, as a corollary, that

2. *The prosperity of a State is determined by the good or bad state of its husbandry.*

We see every where, in districts as well as in entire states, the strongest proofs of the correctness of this proposition. Contrast Dutchess, Orange and Columbia, with any three counties where agriculture is neglected, or managed in the old slovenly manner. In the first, all classes thrive and prosper, if they are industrious and prudent; because there the body is in healthful vigor. In the latter, you will find the body lethargic, diseased, and covered with putrifying sores, and the members partaking of all its infirmities. The last winter's experience, in our cities and towns, shows their extreme sensitiveness to the fluctuations in the supply of agricultural products. Some of the farmers crops were last year deficient in the accustomed yield, and the consequence was, the buyer had to pay 25 and 50 per cent above the ordinary prices for many articles of the first necessity. Had the products of the soil been double what they were, prices would have been low, and the buying classes would have subsisted cheaper and better, and the farmer would have purchased of them, in return, more liberally.

3. *The improvements and profits of agriculture, and the consequent prosperity of a State, are in the ratio of the measure of intelligence which guides its labors.*

The head can do no more than the hands. The animal strength of the ox and the horse would effect no useful purpose, with the contrivance and direction of man. In many countries on the old continent, where the cultivator is debased by ignorance and despotism, the awkward, ill-contrived implements of the primitive ages are still in use; and in some parts of our own land, the hoe, or the rudest machine of a plough, is still substituted for the greatly improved implements of modern times, because the cultivator is ignorant and servile. There is not a manufacturing employment, nor a mechanic art, but has been greatly abridged in its manipulations, and had its fabrics improved in quality, and reduced in price, by the aid of modern science. We say modern science, because we consider that some branches are but beginning to develop their practical advantages to useful labor. We verily believe, that science can do more, and will do more, in the coming thirty years, to improve the condition of agriculture, than has been effected in the two last centuries. An intelligent head is deemed of more importance, and commands a higher compensation, in many of our large establishments, than half a dozen mere sinewy arms. Mind is the lever that moves the material world,—the master-spirit that civilizes man, and multiplies his comforts and enjoyments. We may acquire knowledge in our business, mechanically, but slowly. The acquisition may be accelerated and augmented, to an amazing extent, by the experience and teachings of men who have made natural and chemical science their study and employment for

life. There is another consideration which renders the improvement of the mind of public benefit: ignorance begets indolence, and indolence begets vice. If we would, therefore, inculcate virtue, we must foster industry; and if we would make industry respectable and desirable, we must throw light upon its paths, and secure for it merited reward.

If we have succeeded in establishing our propositions, it results as a consequence, that the improvement of our agriculture is of the first importance to every class of our population; and that this improvement can in no way receive such efficient aid, as by instructing the youth who are hereafter to manage its concerns, as well in the science as in the practice of their business.

We have drawn the readers attention to the subject at this time, that the measures necessary to produce the desired result may undergo a thorough and timely investigation, and that our citizens may be prepared to co-operate in such of them, as may seem best adapted to subserve the public weal, before the coming winter. The distributive share to New-York, of the surplus revenue, which congress, with great unanimity and wisdom, has directed to be divided among the States, will probably amount to between two and three millions of dollars. And the question will present itself to our next legislature, and upon which they will want an expression of the public wish, to what objects, and in what manner shall these monies be applied? Shall they be expended on internal improvements, on education, and in improving our agriculture, upon either or all of them, exclusively, where their benefits cannot fail to be general, and important, and abiding,—or shall they go into the general fund, where there benefits are likely to be more partial and transitory?

As pertinent to this subject, we would ask the reader's attention to the extract in our young men's department, from "First Lessons in Political Economy," by Professor M'Vickar, of Columbia College, a little work which the man as well as boy may peruse with profit.

From the Cultivator, for August.

VIRGINIA HUSBANDRY.

DEAR SIR—I enclose you five dollars, and request you to send the Cultivator from its commencement, to William Price, &c. It is pleasing to observe, that the Cultivator is so popular in this section, and I trust that it will be the means of doing much good among us. There must doubtless be much difference in the objects and the details of agriculture in the region for which the work was originally designed and ours; but the general principles of agriculture are the same every where. In this part of Virginia, we have much the advantage of you in climate, but our soil, on an average, originally thin, has been woefully abused, by the necessity which distance from market and bad avenues to it, have imposed on us, of making tobacco almost our only market crop. This weed is not a great exhauster of land, but requiring all the ma-

nure and most of the labor on a farm, that part of it occupied by other crops, which are great exhausters, must of necessity become poor. Distance from market, also, deprives us of the benefit of lime as a manure. This article generally sells at from \$3 to \$3.50 per tierce. There is probably no part of the United States farther removed from the facilities of procuring lime, and probably none in which lime is more needed by the soil. This defect may, possibly, at some future day, be remedied, by railroads and the improved navigation of our streams. For some time to come, however, if we improve at all, we must endeavor to do it without the aid of lime. Under past agricultural management, our lands have been constantly deteriorating, and unless the course is changed must soon arrive at that hopeful condition when they can get no worse. Under such circumstances, I see no hope for improvement, except from extra exertions to procure putrescent manures. These might be produced in greatly increased quantities, by cultivating root-crops on a greatly increased scale, and by other means of sustaining many more cattle than we generally keep; particularly by cultivating artificial grasses largely, which, while they would afford food for the stock, would protect the land from the sun and from washing, and would meliorate the soil, on the principle of convertible husbandry. That deficiency of lime which so peculiarly adapts our lands to the growth of tobacco, is accompanied by a great drawback in the culture of artificial grasses, from its excessive tendency to the spontaneous production of weeds. The most promising fields of young clover, are speedily overrun by sedge grass, stick-weed sorrel, and a thousand etceteras. We need some *half weed, half grass*, which, on poor land, could contend with such things. Perhaps yarrow might be the thing.

We generally keep no more stock than we can squeeze through the winter on the offal of the grain crops. Any accidental surplus of cattle must either be killed in autumn as grass-beef, or die towards spring to afford leather from their skins. Few think of cultivating a crop especially for cow-feed, and rare indeed is the man who makes express provision for feeding sheep. Were a few acres of our tobacco lands cultivated in roots, and the nakedness of all our idle land hidden by artificial grasses, a great change would soon be perceived in the number and quality of our cattle, and in the fertility of our soil. It is moreover believed, that the increased quantity of manure resulting from such management, would operate as a poison on many of the weeds which are now such pests.

That our soils are well adapted to the culture of ruta бага, I have demonstrated, to my own satisfaction, by a successful trial, on a moderate scale, for a number of years. I intend to try it more largely this year, if the excessive wet weather will abate long enough for me to get the seed in the ground. I cultivated mangel wurtzel last year, on about the fourth of an acre, and succeeded to the astonishment of all who saw the crop. And here I should retouch

the picture drawn above, of Virginia agriculture, by stating, that during the spring there was anxious inquiry for the seed of mangel wurtzel generally through the country, and that the demand could by no means be supplied. Indeed—many thanks to my friend Mr. Ruffin and yourself—there are strong symptoms of improvement in our husbandry, evinced by the greatly increased quantities of clover and other grass seed, brought from the north and sold by our merchants. Some of them, however, contain mischievous impurities, such as blue thistle, St. John's wort, ripple grass, &c. which thrive prodigiously in our soils.

My enthusiasm in the cause of agriculture, must be my apology for being tedious. My intention, when I commenced writing, was simply to mention the matter of business with which I began, and to ask a favor—it is this:—I know that an editor ought not to be expected to become the private correspondent of every obtrusive subscriber he may chance to have. But will you, in one line, recommend a person who would willingly become such? I wish to know more than I do about vetches, chicory, alsike clover, and many other matters. I received a few seed from a friend the last spring, under the name of Egyptian clover, much mixed with chicory and other things, which I never saw before. The clover put forth white blossoms soon after coming up, has, perhaps, as many blooms as leaves, and after the bloom falls, the seeds are retained in a reddish colored bur, somewhat resembling in shape the bur of the teasel. This may, possibly, be the alsike clover. It was, unfortunately, sown in very springy ground, and has been nearly drowned by wet weather. It is inclined to grow erect, and to branch but moderately, and that entirely above ground. I may wish for a friend in your region, who would be willing to answer inquiries about such matters, to attend to small agencies, in the way of transmitting small parcels of grass-seed, choice stock, &c. should I think proper to send for them. It has struck me that my professional brother, Dr. Beekman, might be the man. I leave this matter to you.

Allow me now, sir, in tendering to you assurances of my highest personal respect, to associate therewith my warmest wishes that the Cultivator may find its way into every house in Virginia, and thus become a strong tie between two States, in danger of being dissevered in feeling by papers of a very different description.

Your most ob't &c.

W. S. MORTON.

Near Farmville, Prince Edward Va. 30th June 81.63

A new invention for brick making has been patented by one Sawyer. The bricks are made by it from dry clay, and are said to be superior to the common kind in beauty, strength and durability. The texture is much closer than that of the common brick, so that the article absorbs less water, takes paint much better, not requiring more than one half necessary in the old way, and stands fire much longer. The frost likewise does not operate on it

and bricks are turned out of the new machine, at one half the expense, or less, than by any other mode now in use.—[Pennsylvania paper.]

BEECHER'S CANAL STEAMBOAT.—We witnessed last week the operation, on the Canal of a Steamboat, invented and constructed by Mr. B. D. Beecher, of New-Haven. It is propelled upon the screw augur principle. Two instruments something like screw augurs formed by winding a thick sheet of iron spirally round small shafts, are placed in the bow of the boat, both of which turned inward, and they answer the purpose of a wheel in propelling the boat. This boat was built merely for experiment, and the first of the kind ever constructed, of course very crude; notwithstanding the unfavorable circumstances under which it operated it was propelled at the rate of five or six miles an hour.—[Hampshire Gazette.]

METEOROLOGICAL RECORD.

For the month of May, 1835, kept at Avoylle Ferry, La., (Lat. 31° 10' N., Long. 91° 59' W.) by P. G. VOORHIES.

MAY.					
Days.	Morn.	No n.	Night.	Wind.	Weather.
1	70	74	70	calm	cloudy
2	69	75	73	..	..
3	76	76	74	..	..
4	74	77	75	..	..
5	72	75	80	..	clear
6	68	73	68	w	cloudy
7	64	74	72	calm	clear
8	66	75	74	..	..
9	64	74	71	..	..
10	73	72	66	..	..
11	61	78	70	..	..
12	60	79	74	nw	..
13	64	82	76	calm	..
14	63	82	74	..	..
15	64	81	75	..	..
16	68	86	76	sw	..
17	70	84	74	..	..
18	71	78	74	..	cloudy
19	71	76	70	..	..
20	69	78	68	..	..
21	72	82	78	se	clear
22	68	80	82	calm	cloudy
23	72	82	76	sw	..
24	71	85	72	calm	clear
25	73	76	68	se	cloudy
26	64	74	66	nw	..
27	64	72	65	n	..
28	58	74	71	nw	clear
29	63	80	76	calm	..
30	66	86	76	..	..
31	70	84	80	..	..

Red River rose this month 2 feet 4 1/2 inches—below high water mark 2 feet 2 inches.

HARTFORD AND NEW HAVEN RAILROAD.

The H. and N. H. Railroad Company, are prepared to make immediate contracts for 200,000 running feet of Southern yellow pine, to measure six inches square and from eighteen to thirty feet in length; of the quality best suited to receive a flat iron rail,—1 1/2 above to be delivered at New Haven by the first day of May next. Also for 200,000 running feet in addition, to be delivered by the first day of September 1837, at Hartford or Middletown.

PROPOSALS may be addressed to
ALEX. C. TWINING, Engineer.
New Haven, July 19th, 1836.

RAILWAY IRON, LOCOMOTIVES, &c

THE subscribers offer the following articles for sale.
Railway Iron, flat bars, with countersunk holes and mitred joints,

	lbs.
350 tons 24 by 4, 15 ft in length, weighing 4 ⁰⁰ per ft.	
280 " 2 " 1, " " " 3 ⁵⁰ "	
70 " 14 " 1, " " " 24 " "	
80 " 14 " 1, " " " 1 ⁵⁰ "	
90 " 1 " 1, " " " 1 ⁰⁰ "	

with Spikes and Splicing Plates adapted thereto. To be sold free of duty to State governments or incorporated companies.

Orders for Pennsylvania Boiler Iron executed.
Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz. 30, 33, 36, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 24, 24 3/4, 31, 34, and 34 inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand flax.

Also Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines.

Patent Felt for placing between the iron chair and stone block of Edge Railways.

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, by the agency of one of our partners, who resides in England for this purpose.

Mr. Solomon W. Roberts, a highly respectable American Engineer, resides in England for the purpose of inspecting all Locomotives, Machinery, railway iron &c. ordered through us.

A. & G. RALSTON.

28-tf Philadelphia, No. 4, South Front st.

OFFICE PONTCHARTRAIN, RAILROAD CO. }
New Orleans, 19th May, 1836. }

THE Board of Directors of this Company, will pay the sum of five hundred dollars to the inventor or projector, of a machine or plan to prevent the escape of sparks from the Chimney of Locomotive Engines, burning wood, and which shall be finally adopted for use of the Company. No further charge to be made for the right of the Company to use the same.

By order of the Board,

JNO. B. LEEFE, Secretary.

23-3m.

THE NEWCASTLE MANUFACTURING COMPANY, incorporated by the State of Delaware with a capital of 200,000 dollars, are prepared to execute in the first style and on liberal terms, at their extensive Finishing Shops and Foundries for Brass and Iron, situated in the town of Newcastle, Delaware, all orders for LOCOMOTIVE and other Steam Engines, and for CASTINGS of every description in Brass or Iron RAILROAD WORK of all kinds finished in the best manner, and at the shortest notice.

Orders to be addressed to

Mr. EDWARD A. G. YOUNG,

Feb 20-ytf Superintendent, Newcastle, Del

TO CANAL CONTRACTORS.

Office of the Sandy and Beaver Canal Co., }
July 25th, 1836. }

Proposals will be received at the office of the Sandy and Beaver canal company, in New Lisbon, Columbiana county, Ohio, until Monday the 10th day of October next, for the construction of about 50 cutstone locks, 17 dams, (varying from 5 to 20 feet in height), one aqueduct across the Tuscarawas river, several bridges, and about 10 or 15 miles of canal.

Plans and specifications of the work may be examined at the Engineers office, New Lisbon.

Persons unknown to the Engineer must accompany their proposals with good recommendations.

B. HANNA, President.

E. H. GILL, Chief Engineer.

30-1010

TO CONTRACTORS.

Sealed proposals will be received at Jackson, until the 15th day of September next, for the graduation, masonry and bridging of the 3d division (20 miles) of the Mississippi Railroad.

This road is located on a pine sandy ridge, the country is healthy, and provisions can be readily obtained at all seasons of the year.

The whole line (150 miles) will be placed under contract, as the location advances next fall; and it is believed that no institution can offer greater inducements to good Contractors than this.

F. H. PETRIE, Chief Eng.

ENGINEERS OFFICE, }

Natches, June 10, 1836 }

23-till Sep. 5.

FRAME BRIDGES.

THE subscriber would respectfully inform the public, and particularly Railroad and Bridge Corporations that he will build Frame Bridges, or vend the right to others to build, on Col. Long's Patent, throughout the United States, with few exceptions. The following sub-Agents have been engaged by the undersigned who will also attend to this business, viz.

Hurace Childs,	Henniker, N. H.
Alexander McArthur,	Mount Morris, N. Y.
John Mahan,	do do
Thomas H. Cushing,	Dover, N. H.
Ira Blake,	Wakefield, N. H.
Amos Whitmore, Esq.,	Hancock, N. H.
Samuel Herrick,	Springfield, Vermont.
Simeon Herrick,	do do
Capt. Isaac Damon,	Northampton, Mass.
Lyman Kingsly,	do do
Elijah Halbert,	Watertown, N. Y.
Joseph Hubbard,	Dunkirk, N. Y.
Col. Sherman Peck,	Hudson, Ohio.
Andrew E. Turnbull,	Lower Sandusky, Ohio.
William J. Turnbull,	do do
Sabrid Dodge, Esq.,	(Civil Engineer,) Ohio.
Booz M. Atherton, Esq.,	New-Philadelphia, Ohio.
Stephen Daniels,	Marietta, Ohio.
John Rodgers,	Louisville, Kentucky.
John Tillson,	St. Francisville, Louisiana.
Capt. John Bottom,	Tonawanda, Penn.
Nehemiah Osborn,	Rochester, N. Y.

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington, two miles from the former place. Across the Metawankeng river on the Military road, in Maine. On the National road in Illinois, at sundry points. On the Baltimore and Susquehanna Railroad at three points. On the Hudson and Paterson Railroad, in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contocook river at Hancock, N. H. Across the Connecticut river at Haverhill, N. H. Across the Contocook river at Henniker, N. H. Across the Souhegan river at Milford, N. H. Across the Kennebec river at Waterville, in the state of Maine. Across the Genesee river, at Mount Morris, New-York, and several other bridges are now in progress. The undersigned has removed to Rochester, Monroe county, New-York, where he will promptly attend to orders in this line of business to any practicable extent in the United States, Maryland excepted.

MOSES LONG.

General Agent of Col. S. H. Long.

Rochester, May 22d, 1836.

19y-tf.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersunk heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

* * All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y., July, 1831.

* * Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes. (1J23am) H. BURDEN.

AMES' CELEBRATED SHOVELS,

SPADES, &c.

300 dozens Ames' superior back-strap Shovels	
150 do do do plain do	
150 do do do cast-steel Shovels & Spades	
150 do do Gold-mining Shovels	
100 do do plated Spades	
50 do do socket Shovels and Spades.	

Together with Pick Axes, Churn Drills and Crow Bars (steel pointed), manufactured from Salisbury refined iron—for sale by the manufacturing agents,

WITHERELL, AMES & CO.

No. 2 Liberty street, New-York.

BACKUS, AMES & CO.

No. 8 State street, Albany

N. B.—Also furnished to order, Shapes of every description, made from Salisbury refined Iron. 4-ytf

NOTICE TO CONTRACTORS.

JAMES RIVER AND KANAWHA CANAL. PROPOSALS will be received at the Office of the James River and Kanawha Company, in the City of Richmond, from the 15th to the 23rd day of August, for the construction of all the Excavation, Embankment and Walling now under contract, together with nearly all the Culverts and the greater portion of the Locks between Lynchburg and Maidens' Adventure.

The work now advertised embraces the twenty miles between Columbia and the head of Maidens' Adventure Pond, the eight miles between Seven Island Falls and Scottsville, and about twenty isolated sections, reserved at the former letting, between Scottsville and Lynchburg.

The quantity of masonry offered is very great—consisting of about two hundred Culverts of from three to thirty feet span; nine Aqueducts, thirty-five Locks a number of Wastes, with several farm and road Bridges.

General plans and specifications of all the work, and special plans of the most important Culverts and Aqueducts, will be found at the offices of the several Principal Assistant Engineers on the line of the Canal.

The work will be prepared for examination by the 25th July; but mechanics, well recommended, desirous of immediate employment, can obtain contracts for the construction of a number of Culverts at private letting.

Persons offering to contract, who are unknown to the subscriber, or any of the Assistant Engineers, will be expected to accompany their proposals by the usual certificates of character and ability.

CHARLES ELLET, Jr.

Chief Engineer of the James River and Kanawha Company.

NOTE.—The Dams, Guard-Locks, most of the Bridges and a number of Locks and Culverts, are reserved for a future letting. Persons visiting the line for the purpose of obtaining work, would do well to call at the office of the Company in the city of Richmond, where any information which they may desire will be cheerfully communicated.

The valley of James River, between Lynchburg and Richmond, is healthy. (20-ta18) C. E. Jr.

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to.

Also, CAR SPRINGS.

Also, Flange Tires, turned complete.

18 ROGERS, KETCHUM & GROSVENOR.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads.

No. 264 Elizabeth street, near Bleeker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad now in operation. J25ct

ALBANY EAGLE AIR FURNACE AND MACHINE SHOP.

WILLIAM V. MANY manufactures to order, IRON CASTINGS for Gearing Mills and Factories of every description.

ALSO—Steam Engines and Railroad Castings of every description.

The collection of Patterns for Machinery, is not equalled in the United States. 9-ly

NOTICE OF THE NEW-YORK AND ERIE RAILROAD COMPANY.

THE Company hereby withdraw their Advertisement of 26th April, in consequence of their inability to prepare in time, the portions of the line proposed to be let on the 30th June, at Binghampton, and on the 11th of July at Monticello. Future notice shall be given, when proposals will be received at the above places, for the same portions of the road.

JAMES G. KING, President.

21-tf

ARCHIMEDES WORKS.

(100 North Moor street, N. Y.)

NEW-YORK, February 12th, 1836.

THE undersigned begs leave to inform the proprietors of Railroads that they are prepared to furnish all kinds of Machinery for Railroads, Locomotive Engines of any size, Car Wheels, such as are now in successful operation on the Camden and Amboy Railroad, some of which have failed—Castings of all kinds, Wheels, Axles, and Boxes, furnished at shortest notice.

H. R. DUNHAM & CO.

4-ytf